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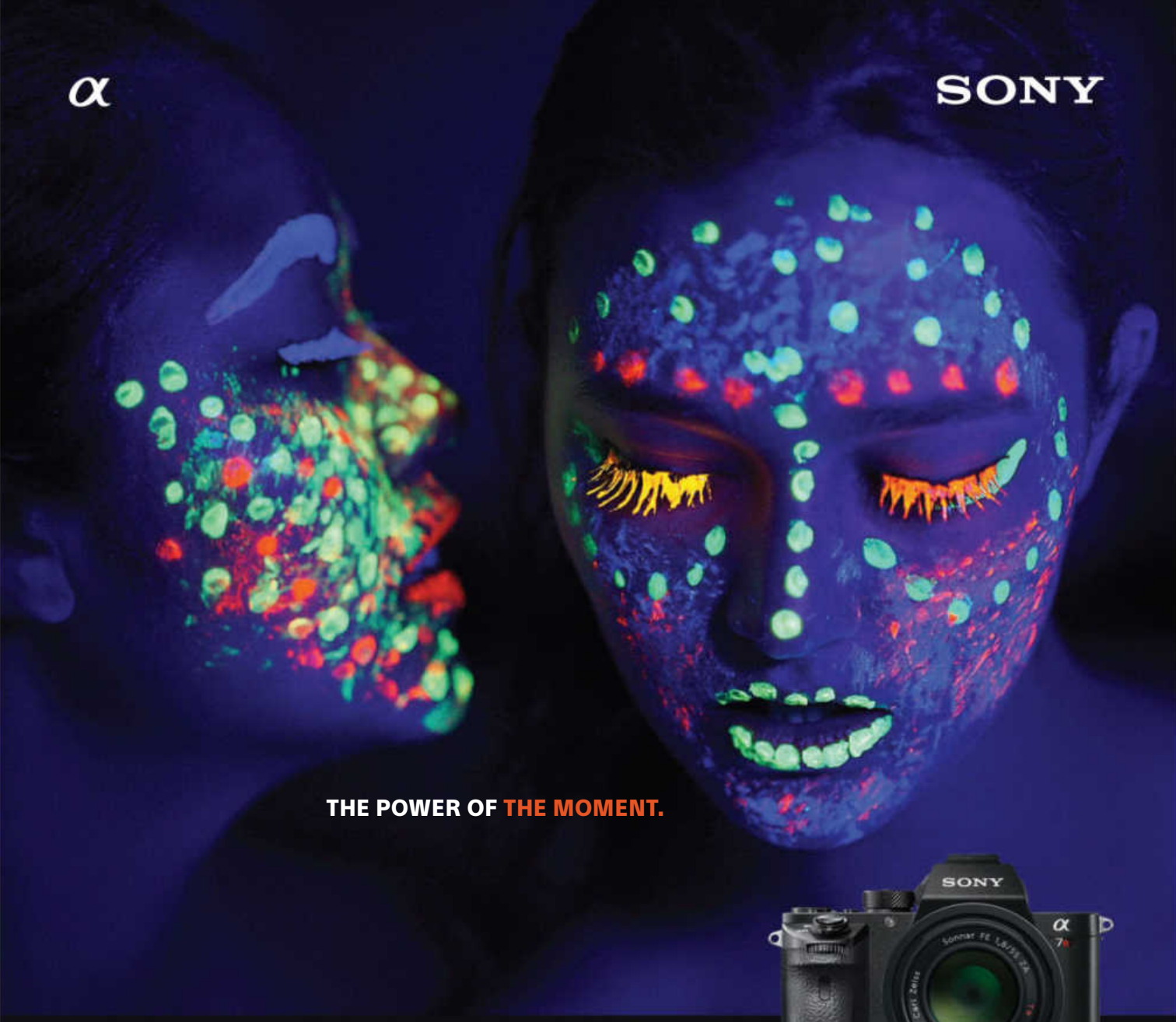
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Don Smith

Don Smith MADE *the* SWITCH



A SPORTS SHOOTER TURNED LANDSCAPE PHOTOGRAPHER, DON SMITH'S SWITCH TO SONY MIRRORLESS CAMERAS WAS, LIKE HIS ENTIRE CAREER, ALL ABOUT THE LIGHT

Don Smith has always been an early adopter of the best new technologies. In 2002, as a working sports photographer, he switched from film to digital. In recent years, having traded sports for landscapes, Smith made another big switch—from a bulky DSLR to the next big thing: the Sony a7 line of mirrorless compact cameras.

"What I absolutely fell in love with first about mirrorless," he says, "was that I was looking at what the sensor was going to capture. I had been all Canon, and as a pro I never thought there would be any way that I would be thinking seriously about mirrorless. All I wanted was more dynamic range, and Sony was the first company in my opinion that started paying attention to what pros really wanted in cameras. They were building these phenomenal sensors and I was getting two-and-a-half to three stops more dynamic range than my Canon 5D Mark III. That's not a knock on Canon; that's just saying that somebody was being a little more progressive in these sensors."

Smith loved the dynamic range of the first generation Sony a7 cameras, and he's blown away by the new Sony a7R II. After one shoot, he was so impressed with the detail and dynamic range that he penned a blog post: Have We Achieved Human Vision?

"I was shooting right back into the setting sun," he says of his first test of the a7R II, "with fog and clouds. I chose a frame, took it into Lightroom and made a few adjustments and there it was. I recovered all the highlights, even in the sun. If you put up a histogram there is no full blown highlight there. I can't tell you unequivocally it's replicating human vision, but it's so close!"

"Running workshops," Smith says, "I get to see files that come off of all different cameras, and every time one would come off the Nikon D800 or D810—which use the same sensor as the Sony a7R—I would go, 'Is this a blend of images?' Oh no, that's one image. At one point I really thought about selling off all my Canon gear and making a full switch over to Nikon. I went through this for about a month and I thought, no, the smarter way to do this is to get that Sony sensor in an a7R and get the camera and a Metabones adaptor so I can adapt to all my Canon glass and see how I like the camera. And that was it. I got that camera in my hands and I did not want to give it back. I told a workshop group at the time, 'This is the most incredible camera I have ever had in my hands, the most incredible sensor I have ever worked with.'"

FOR MORE ABOUT DON SMITH, VISIT SONY.COM/ALPHA

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Photographer: Keith S. Walklet
Location: Hayden Valley, Yellowstone National Park, Wyoming
Equipment: Pentax 67, 135mm lens, Fujichrome 100
Situation: Full of stark contrasts in temperature, color and form, Yellowstone's winter landscape is a source of continual surprise and delight. This was the last image I made on an excursion there in January 1998. The light was rapidly diminishing as this storm approached, and I was genuinely concerned about the potential for whiteout conditions.

I had explored a number of focal lengths and compositions when my solitude was interrupted by the arrival of a snow coach—in this case, a Dodge van on skis. From the passenger window emerged a head that exclaimed, "I'm sorry, those are our trees!"

I squinted at this person, and after a few moments, hesitantly asked, "John Shaw?"

Indeed, it was John Shaw, leading a winter workshop in Yellowstone. We chatted briefly while a bevy of eager students spilled out and began to record the trees. To this day, I haven't run across any other images made from that moment, but one of my friends recently shared one that he captured of the same group of trees last winter. The image he made underscores that many years have passed. The trees have matured and the distinctive triangular shape that appealed to me has rounded out, providing new opportunities.

—Keith S. Walklet



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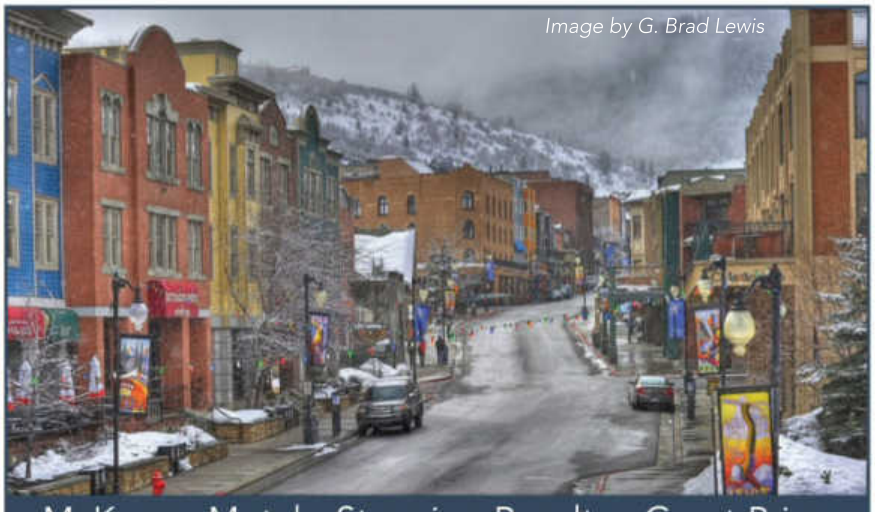


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Grant Gunderson

Some of my happiest childhood memories are of my family's winter ski trips. In addition to quick weekend visits to local Big Bear Mountain throughout the season, where the crunchy man-made stuff was more likely than fresh snowfall, once a year we'd spend a week or longer with serious powder in Colorado. The images that stick in my mind the most aren't of planning a route through waist-high moguls, but of the view at the top of the hill, exiting the chair lift and just staring for a few minutes in awe of the vast expanses and snowy peaks of the Rockies. Looking through ski photographer **Grant Gunderson**'s images for his article "Big Air, Deep Powder" brought back those memories, and a recall of sensations like the smell of snow and the exhilarating sting of brisk, frosty air.

Winter is a magical time of year, especially in those parts of the world that experience all four seasons. Part of that magic is the sense of meditative calm, the literal and visual quiet of a wilderness landscape blanketed in soft white. **Keith Walklet** and **Annette Bottaro-Walklet** spent 14 years living in Yosemite National Park, with one of the most spectacular wild areas on the planet as their backyard. Though this area inspires photographers year-round, for the Walklets, winter is the most wonderful time. "Winter is a season of silence," Keith observes, "where one celebrates absences and delights in solitude. It is a season of long shadows, simplicity and space, of energy and transformation." Their portfolio in this issue, "Quiet Landscapes," captures this sense of simplicity and space, of solitude, through neatly arranged, articulate compositions.

As photographers, we're both fine artists and documentarians. At the most basic level, our photographs seal a moment in time that never will be exactly repeated, but sometimes we happen to capture images that will be the only enduring record of special places. Recent years have witnessed the destruction of cultural and historical sites as the result of war and willful cultural cleansing at the hands of extremist groups, including areas designated as UNESCO World Heritage Sites. In the wake of the destruction, all that remains of these places are images, underscoring the value of photography not only as a personal aesthetic pursuit, but also as a form of journalism that preserves for future generations memories of our collective past. In "Protected Places," **Tom Till** shares some of his favorite UNESCO sites, including lesser known destinations and tips for planning a trip of your own.

On a lighter note, let's talk about perfecting your exposures. Every photograph needs some postprocessing. **Michael Clark** walks us through the basics of his processing workflow for an image that you may recognize—it was used extensively by Apple to promote the debut of their Retina iMac. Landing work with clients like Apple demands exacting attention to detail and skillful use of the tools at one's disposal. Learn about Clark's approach to the adjustments available in Adobe Lightroom (and why there's still one final step he does in Photoshop) in his article "The Postprocessing Pipeline."

In this issue's equipment coverage, you'll find our **annual Editors' Picks**, a roundup of some of the year's most noteworthy gear. We also offer an extensive look at mirrorless cameras, the fastest-growing segment in the market. There's a reason why mirrorless interchangeable-lens cameras are hot—they blend the versatility of lens selection with extremely lightweight, compact bodies. And while the DSLR versus mirrorless debate isn't settled in terms of overall image quality, cameras like Sony's new a7R II are making even longtime DSLR photographers consider the benefits of a lighter, more portable system. **Contributing Technical Editor David Schloss** provides an in-depth overview of mirrorless cameras and compares the systems available today.

As 2015 comes to a close, all of us at *Outdoor Photographer* wish you a wonderful holiday season with family and friends, and a happy, healthy and prosperous New Year!

—Wes Pitts, Editor/Editorial Director

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◀ FUJIFILM X-T1 IR

While most photographers likely will opt for the highly regarded **Fujifilm X-T1**, the new **X-T1 IR** has the unique ability to capture the infrared spectrum for both stills and video. Apart from this feature, its specs are basically identical to the X-T1, with a 16.3-megapixel APS-C sensor, a generously sized electronic viewfinder and a magnesium body that's built to be weather-resistant when paired with Fujinon weather-resistant lenses like the new XF16-55mm F2.8 R LM WR. These cameras are fast, too, with continuous shooting up to 8 frames per second. List Price: $1,699 (X-T1 IR/body only); $1,299 (X-T1/body only). **Contact:** Fujifilm, fujifilmusa.com.



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If you take laptops and drives into the field for on-location backup, **G-Tech**'s **ev All-Terrain Case** protects their G-DRIVE ev series drives from drops, dust and water. It can float and shield the drive from damage in up to one foot of water for up to 30 seconds, as well as protect it from drops up to 2 meters. The ATC is available with a G-Tech ev drive, or sold separately. List Price: $49 (ev All-Terrain Case only); $179 (with 1 TB drive). **Contact:** G-Technology, g-technology.com.



◀ INCASE DSLR PRO PACK

Known for their sleek MacBook backpacks, **Incase** also makes some excellent camera bags, like the **DSLR Pro Pack**. It's the largest of their camera bags, with a highly customizable interior that can accommodate two pro bodies and multiple lenses and accessories. The rear-loading pack allows quick access through the top to a camera with lens attached. An additional compartment on the front has padded pockets for a 15-inch laptop, tablet and smartphone, plus personal items. List Price: $149. **Contact:** Incase, incase.com.

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LOWEPRO WHISTLER ▶



For photographers who venture out year-round, the **Lowepro Whistler BP 450 AW** is a four-season, rear-loading pack with a customizable interior that can accommodate a pro DSLR with a lens attached, plus an additional pro DSLR body, 3 to 4 lenses and accessories. At the front of the pack is a large, expandable pocket with a waterproof barrier and drain holes for wet outdoor gear. The pack also includes a detachable all-weather cover for additional protection. Straps at the sides of the pack allow you to attach heavy items like your tripod or skis without obstructing access to your camera. List Price: $389. **Contact:** Lowepro, lowepro.com.



◀ LENSPEN OUTDOORPRO KIT

Created specifically with outdoor photographers in mind, the **LensPen OutdoorPro Kit** holds everything you need to safely keep your optics clean of dust, smudges and fingerprints. The kit contains the original LensPen for your lenses, plus the MiniPro for your optical viewfinder and action camera lens. It also includes the MicroKlear microfiber cloth for cleaning non-optical surfaces of your camera and lenses, and a FogKlear cloth for anti-fog protection, which provides more than 200 applications before needing to be replaced. The kit comes in a carrying case that can be attached to a belt or camera strap. List Price: $34. **Contact:** LensPen, lenspen.com.

MANFROTTO 290 DUAL ▶



The new **Manfrotto 290 Dual** is a three-section aluminum design with a 90º center column mechanism that lets you extend the column either vertically or horizontally, making it possible to explore a variety of compositions without moving the tripod itself. Coupled with the tripod's four leg angle positions, this feature allows you to position your camera at ground level. The overall height range is from 2.17 inches to just over 5.75 feet, with a load capacity of 8.82 pounds. List Price: $239 (with 804 Mark II 3-way head). **Contact:** Manfrotto, manfrotto.us.

NIKON D810A ▼

Astrophotography has become so popular with landscape photographers that **Nikon** introduced a full-frame DSLR dedicated to the practice, the **D810A**, which incorporates an IR cut filter and a 36.3-megapixel sensor optimized for astrophotography, enabling the camera to capture the red tones of the H-alpha (656nm) wavelength of emission nebulae. It also offers long exposures up to 15 minutes, plus built-in interval and time-lapse modes with the ability to capture an unlimited number of JPEG images at shutter speeds slower than four seconds for star-trail photography and time-lapse videos. List Price: $3,799 (body only). **Contact:** Nikon, nikonusa.com.



MOAB JUNIPER BARYTA RAG ▶



Fine-art photo papers take your best images and elevate them to gallery-quality prints that you'll be proud to display. **Moab by Legion** offers a variety of archival papers, like their new **Juniper Baryta Rag 305**, a double-weight inkjet paper made from 100% cotton with a subtle gloss surface. It's available in cut-sheet sizes from 5x7 to 17x22 inches, plus A2 and A4, and also 50-foot rolls in 17-, 24- and 44-inch widths. List Price: From $18.98. **Contact:** Moab by Legion Paper, moabpaper.com.

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Image shot with the Olympus OM-D E-M1 and an M.Zuiko ED 12-40mm f2.8 PRO lens by Olympus Trailblazer Peter Baumgarten.



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OLYMPUS OM-D E-M5 MARK II ▶



Weatherproof camera construction and sealing is a feature usually found in the most expensive professional DSLRs that sell for much more than the **Olympus OM-D E-M5 Mark II**. Pair this 16-megapixel Micro Four Thirds camera with one of Olympus' M.ZUIKO Digital weather-sealed lenses for extra protection shooting in inclement weather. The camera also includes Olympus 5-axis sensor-shift image stabilization for up to 5 stops of shake reduction for both stills and 1080 HD video. Firmware Version 2.0, due to be released in late 2015, but not yet available at the time of this writing, promises to enable 4K time-lapse video capture, too. List Price: $1,099 (body only). **Contact:** Olympus, getolympus.com.



◀ OP/TECH USA MIRRORLESS WRIST STRAP

A convenient alternative to a neck strap for your lightweight mirrorless camera, the **Mirrorless Wrist Strap** from **OP/TECH USA** attaches to your camera's strap cleat and secures to your wrist with an adjustable "security slide." Made from neoprene for comfort, the Mirrorless Wrist Strap features a quick disconnect mechanism, allowing you to detach from the camera without removing the strap from your wrist. List Price: $9.95. **Contact:** OP/TECH USA, optechusa.com.

PANASONIC LUMIX DMC-GX8 ▼

One of our favorite features of the **Panasonic Lumix DMC-GX8** is the articulating eye-level EVF that tilts up to 90º, similar to the one in the GX7, but larger. The 20.3-megapixel camera incorporates an innovative Dual I.S. image-stabilization system, which leverages both body I.S. and lens I.S. working together simultaneously, especially useful for handheld telephoto work. In addition to stills, the DMC-GX8 also can capture 4K video, from which you can extract 8-megapixel still images captured at 30 fps. Panasonic has also improved autofocus performance in low-light situations and added Starlight AF for sharp images of the night sky. List Price: $1,199 (body only). **Contact:** Panasonic, shop.panasonic.com.



REALLY RIGHT STUFF L-PLATES ▶



Unlike traditional quick-release plates that give you only one mounting surface on the bottom of the camera, L-plates provide an additional mounting surface on the side of the camera, allowing you to quickly switch from horizontal to vertical orientation without recomposing your shot. This also keeps the weight of your camera directly over the apex of the tripod for optimum stability. **Really Right Stuff L-plate** designs are specific per camera model for a custom fit, and machined from high-grade aluminum. We also like that they're made in the USA. List Price: Varies, depending on camera and L-plate type. **Contact:** Really Right Stuff, reallyrightstuff.com.



◀ SAMYANG TILT-SHIFT 24mm F3.5

Tilt-shift lenses provide a number of creative advantages for landscape work, including an enhanced ability to control depth of field to capture edge-to-edge sharpness from foreground to background and to correct perspective issues like keystoning. The main drawback of tilt-shift lenses is their high cost. **Samyang**'s **Tilt-Shift 24mm F3.5** lets you explore the advantages of tilt-shift optics for less than half the price of other options. It's designed for full-frame cameras, but is also compatible with APS-C-sensor cameras, and available in mounts for all popular systems. Estimated Street Price: $799. **Contact:** Samyang, syopt.com.

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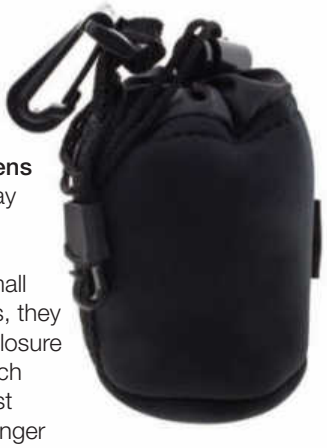
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SLINGER NEOPRENE LENS POUCH ▶



Extra protection for your precision optics is always a good idea. **Slinger neoprene lens pouches** are an inexpensive way to shield your lenses from dust, moisture, bumps and abrasion. Available in multiple sizes for small primes to extra-large telephotos, they feature a secure drawstring enclosure and a clip for attaching the pouch to your camera bag's D-ring. List Price: From $9.95. **Contact:** Slinger (Adorama), adorama.com.

SIGMA 24-35mm ▶ F2 DG HSM | A



With a constant fast *f*/2 aperture throughout its wide-angle zoom range, the **Sigma 24-35mm F2 DG HSM | A** is designed to provide full-frame cameras with a lens that performs like a fast prime, but with the versatility of a zoom. Ideal for working travel and landscape compositions, the lens is compatible with Sigma's USB Dock, which allows you to update lens firmware and customize its performance characteristics. Available in Canon, Nikon and Sigma mounts. List Price: $999. **Contact:** Sigma, sigmaphoto.com.



◀ SONY a7R II

Sony's full-frame a7 redefined expectations for mirrorless cameras, and the series continues to push the boundaries of the segment with the new **a7R II**. Its 42.4-megapixel, back-illuminated sensor with no low-pass filter currently sits atop DxOMark.com's sensor ratings, with an overall score of 98, besting top-tier mirrorless and professional DSLRs alike. The a7R II includes Sony's 5-axis SteadyShot image stabilization for up to 4.5 stops of compensation, and can capture 4K video with stereo sound via the built-in mic or with an optional external mic. The camera also offers a Silent Shooting mode that uses an electronic shutter for noiseless image capture and no sharpness-compromising vibration. List Price: $3,199 (body only). **Contact:** Sony, store.sony.com.

TAMRAC CORONA ▶



Available in three sizes, the largest of which will accommodate a pro DSLR with lenses and accessories, **Tamrac**'s **Corona** is a highly adaptable pack, and can be worn as a backpack or a sling. The side and front panels give you multiple ways to access your gear, especially helpful if you choose to configure your Corona as a sling. A large top compartment has room for a jacket and personal accessories, and the rear compartment features a padded pocket to protect a 15-inch laptop. The Corona also includes a form-fitted, seam-sealed rain cover. List Price: From $169. **Contact:** Tamrac, tamrac.com.



◀ TAMRON 18-200mm F/3.5-6.3 Di II VC

Designed for use with APS-C-sensor cameras, the **Tamron 18-200mm F/3.5-6.3 Di II VC** provides an incredibly versatile 35mm-equivalent range of 27-300mm, making it an ideal lens for travel, allowing you to keep gear to a minimum. Available in Canon, Nikon and Sony mounts, the 18-200mm F/3.5-6.3 Di II VC incorporates Tamron's Vibration Compensation image stabilization for sharp handheld shots even at the tele end of the zoom range. It's very compact and lightweight at just 3.7 inches long and 14.1 ounces. Estimated Street Price: $249. **Contact:** Tamron, tamron-usa.com.

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▼ TOKINA 24-70mm F/2.8 PRO FX

A premium wide to mild tele lens for full-frame Canon and Nikon cameras, the **Tokina 24-70mm F/2.8 PRO FX** is constructed with multiple Super-Low Dispersion elements designed to provide optical resolution to match the capability of ultra-high-res sensors. Tokina's One-touch Focus Clutch Mechanism lets you switch from auto to manual focus quickly and intuitively—simply pull the focus ring back toward the lens mount to engage manual focus. List Price: $999. **Contact:** Kenko Tokina USA, kenkotokinausa.com.



VANGUARD ALTA PRO 263AGH ▶

The **Alta Pro 263AGH** tripod features **Vanguard**'s Multi-Angle Central Column, which allows the column to move from zero to 180º angles horizontally or vertically, making this a very versatile tripod and an excellent choice for macro work. The 263AGH kit includes the GH-100 grip-style ballhead that allows 360º panning, 122º side-to-side tilt and 8º back-to-front tilt with the convenience of single-handed operation and the ability to adjust ballhead tension. List Price: $249. **Contact:** Vanguard, vanguardworld.us.





◀ ZEISS BATIS 2/25

Expanding the range of pro-quality lens options for Sony's a7-series cameras, the new **Zeiss Batis 2/25** provides a prime wide-angle focal length and fast *f*/2 maximum aperture, plus a minimum focusing distance of just 7.9 inches. Compatible with all E-mount Sony cameras, the lens features weatherproof metal construction to resist dust and moisture. It also offers a unique OLED that displays focus distance and depth-of-field data that's easily readable even in low-light conditions. List Price: $1,299. **Contact:** Zeiss, zeiss.com/camera-lenses.

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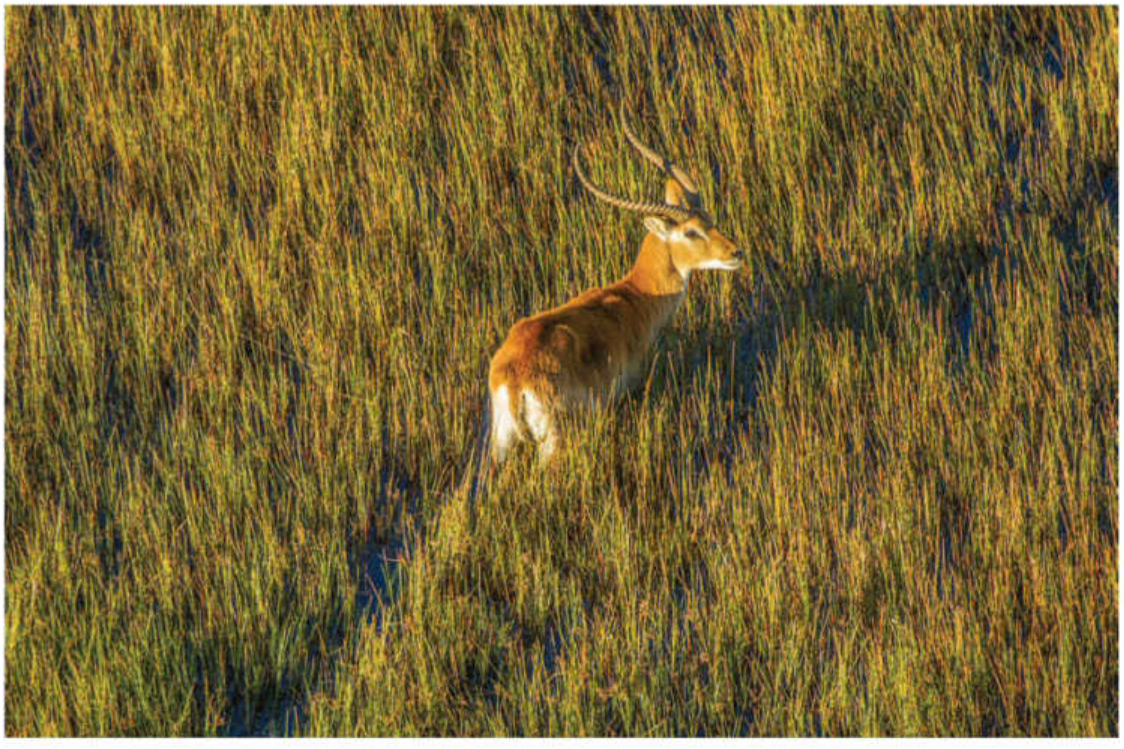
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Keeping The Wild In Wildlife

Toward the goal of wildlife photography as a harmless and sustainable practice

[**By George D. Lepp and Kathryn Vincent Lepp**]



"Copter View": The red lechwe, an elusive, swamp-dwelling antelope, is difficult to photograph in its own environment. A gentle approach from the air and long reach (400mm) captured this beautiful animal at sunrise in Botswana's wildlife-rich Okavango Delta. Canon EOS-1D Mark IV, EF 100-400mm at 400mm, 1/750 sec. at f/5.6, ISO 800

The subject of humans and their fascination with wildlife has been a hot topic lately. As the mainstream media feasted on the topic of big-game hunters wasting threatened species for sport and profit (most specifically, Cecil the Lion), wildlife photographers rightfully expressed horror and congratulated themselves for their harmless pursuits of the same subjects. While we're truly unable to fathom the concept of killing for sport, at the same time, we observe that hordes of photographers, in hot pursuit of meaningful images of wild creatures, can cause their own kinds of harm, despite their benign, even loving intentions.

First, Do No Harm

The truth is, both sport hunting and wildlife photography, particularly of big game, are usually conducted within the same, highly monetized, public and private spheres around the world: reserves, public lands, national parks and game farms. Hunting and photography feed an enormous public and private economic system throughout the world. There's an obvious, but essential difference between the two pursuits, of course, which we'll state here for the sake of clarity: Hunters maim or kill their subjects and remove them from the environment and the gene pool; photographers take only photographs and, ideally, leave their subjects unscathed by the experience.

But do we? Let's take a hard look at ourselves, the impacts we have on wildlife subjects and practices we can adopt to achieve the goal of wildlife photography as a harmless and sustainable practice. Here, we'll discuss just three aspects of wildlife photography that are receiving considerable negative attention today. (There's much more to be said about this subject, as we did a few years back in our book, *Wildlife Photography: Stories from the Field*.)

Stressing

"When you encounter an animal in the wild, you represent all of that individual's cumulative experiences with humans, and you are adding to that experience with your own actions." We're quoting ourselves here, from a description of an encounter with a very aggressive African elephant in Botswana a few years ago. The issue of cumulative stress on wildlife subjects is more important than ever, as there are far more photographers now than there were when I took up nature photography 50 years ago, and there are few remaining inaccessible locations on

Earth. I've always photographed under the premise that no photograph is worth the life of the animal that we wish to capture with our cameras. With that said, over the decades, I've observed that those we ask to manage wildlife act with varying degrees of intensity, depending upon the venue and the philosophy, to keep photographers from disturbing "their" subjects.

The details of wildlife management are often murky and illogical. As an example, I recall a Yellowstone Park Service study of human/elk interactions. Researchers placed heart monitors on some of the elk to associate levels of stress (as evidenced by elevated heart rates) to close approaches by humans in the winter season. The results indicated that the animals' heart rates increased, indicating stress, when humans approached even from a great distance, and before the animals indicated any observable response, such as lifting their heads to look at the people. My problem with the study was that the elk in the study had been pursued, darted and collared by researchers, and at least one of the animals died during the procedure. I think those elk might be a bit sensitive to humans after that experience! I would also think that an elk's pulse would be elevated with every intrusion into its space, whether it's a photographer, or a wolf, or even a vehicle along the park roads.

Nonetheless, I keep this study in mind when I do photograph in Yellowstone and similar venues, especially in winter; since I don't have access to elk EKGs, I continue to base my proximity on their observable response to my presence. When photographing a wild subject, use cameras, lenses and techniques that allow you to reach out without getting close. Watch from a distance to establish a baseline understanding of normal behavior. Then, as you approach, you'll be able to discern changes that indicate you're causing a disruption. And, of course, we must follow the directives within the jurisdictions in which we find ourselves.

Pushing

While photographing wild animals from the air once was a relatively rare occurrence limited to research teams and BBC cameramen, the helicopter experience has become a routine aspect of African photo safaris. Two specific, contrasting flights come to mind. One

(Cont'd on page 81)





A Day On The Job

When timing is everything

[**By Bill Hatcher**]

This series of photos was taken one day while on a magazine assignment. Only one of these photos ended up being published in the article, but what's interesting is that these images were the first of 14 locations and thousands of images I would shoot over the course of a year for this story—14 exceptional locations, where I had to get the timing right because great events only happen once.

The project began after I moved back to Arizona in the fall of 2013. I made a point to check in with the photo editor at *Arizona Highways* magazine, Jeff Kida. Arizona is one of the few states that publishes a travel magazine, but this isn't surprising, given that there are 24 national park units and natural areas, from deserts to 12,000-foot peaks, that could fill many lifetimes with incredible places to explore. Since *Arizona Highways* published its first photo portfolio by Ansel Adams back in 1935 (to rave reviews from its readership, of course), the editors of the magazine haven't looked back. Since then, it has become known worldwide for the quality of its photography, but this isn't a story about the magazine, rather how an assignment from the magazine led me to shoot skiing in Arizona to produce one of 14 images that appeared in a portfolio of my photography in their September 2015 issue.

When thinking of a project to pitch to *Arizona Highways*, I wanted to work on a story that would allow me to travel through a big section of Arizona and act as a reintroduction to the region. What I came up with was a proposal to shoot a portfolio of images of the Little Colorado River. I had already explored many sections of the river over the years, and was aware of its highly varied landscape, but my experiences had given me only a glimpse of the river. The Little Colorado has been in the recent news a lot, as several proposed tourism developments are poised to destroy the river's wild and scenic beauty, as well as divert water from dozens of the springs that supply the river's perennial flow. The Little Colorado had become a big talking point, but few people had really seen the place.

I proposed to explore the entire 340-mile length of the river, from its source in the White Mountains to the confluence where the Little Colorado meets the Colorado River in Grand Canyon National Park. And I figured the only way to cover all the facets of the river was to photograph it in a variety of seasons. I sent my proposal to the magazine, and Jeff got back soon after, saying that the story would be perfect for a Hatcher portfolio for their annual Photography







For an assignment on Arizona's Little Colorado River in a variety of seasons, Bill Hatcher was fortunate when a rare late spring snowstorm developed. But his many decisions in the field made getting the right image possible.

Issue in September 2015. It was only March of 2014.

I started plotting my strategy to fill 10 pages of the magazine, while keeping an eye on weather near the Little Colorado. And, wouldn't you know it, a NOAA weather alert warned of a big late spring storm that could dump over a foot of snow in the Arizona high country. Capturing the Little Colorado near its source at 10,000 feet on Mount Baldy under a blanket of fresh snow included too many good elements in one photo to dare miss. I needed to get there fast, and with no time to look for partners, this would be a solo trip. I hastily gathered my ski gear and packed a tent, sleeping bag, camera, tripod and three days of food. I drove out of Tucson, weaving past towering saguaros as I headed for the high country. Talk about altered realities: In a matter of hours, pines replaced cactus and I was driving blind through fat spring snowflakes on an unplowed road. My eyes were glued to the front windshield of the Subaru for snow markers and the edge of the road, while fighting the vertigo caused by swirling snow. The sun had set by the time I made it to the road's end, with darkness coming on as I skied the seven miles to my camp along the Little Colorado.

I didn't have much of a plan and had only hiked in this area once the previous summer—I recognized nothing. In darkness the tent went up, and I quickly got to work shooting night shots of camp in the falling snow. My mantra: When in doubt, shoot.

Before dawn I was up, photographing myself preparing for the day's exploration. I loaded my pack for a full day's outing and skied out of basecamp to make my way up the valley on skis. The Little Colorado winds through meadow after meadow as it descends from its source around 10,600 feet on the east face of Mount Baldy. The photo I was looking for was a ski shot and I, out of necessity, would be the model. I had all night to think about what I was looking for; I was there to capture the river valley with trees thick with fresh snow. My trusty PocketWizard wireless remotes have an effective range of hundreds of yards, and I would use every bit of that distance since my intention was to set the camera up far away from my position for a big landscape shot.

I broke trail through a foot and a half of new snow. The going was slow, but in every meadow I passed through I stopped for photos, finding the best vantage and setting up the camera tripod for shots. It was a time-consuming endeavor. The reality about shooting with remotes is that you have to shoot many, many photos to get the shot right, but I also had to work fast because the storm was clearing and it wouldn't take long for the Arizona sun to transform the fluff under my feet to slush. This being a magazine assignment, I would be selective. My snow composition was intended for a horizontal two-page magazine spread. For that reason, every frame I shot would be horizontal and my position in the frame was in the left third of the shot since that composition, to my eye, reads better when the page is opened. I was shooting with the 36-megapixel Nikon D800; if the editor wanted to grab a vertical from any of the horizontal frames, that wouldn't be a problem.

I set my camera's drive mode on low-speed continuous so it would fire at 3 frames per second. With my eye I would mark a tree or rock in the camera frame so I could determine where I would enter the frame. Once set up, I would ski into the correct position and trigger the camera when I hit the mark. As the frames clicked through, I increased my skiing speed so the frames would capture a different stride through a 5- to 10-second burst of shooting. I would check the images, then recompose until I got things right. After I was happy with the results, I would pack up gear and move further up valley. The snow didn't stop until well after the golden hour. By late afternoon, the intense spring sun was out and the snow was disappearing.

The image the editors chose to publish in the magazine was the ski shot with the boulder in the foreground. The photo was made in the afternoon, but clouds had kept the snow fresh and, by then, I was plenty warmed up in the role of ski model, having already shot hundreds of photos in a half-dozen or more locations. One could say I was lucky to time catching a rare Arizona snowstorm, but there were also a hundred other calculated details that coalesced to make this photo a reality, and that's where the real magic in photography is revealed. **OP**

*To see more of **Bill Hatcher**'s photography and read his blog, visit his website at billhatcher.com.*

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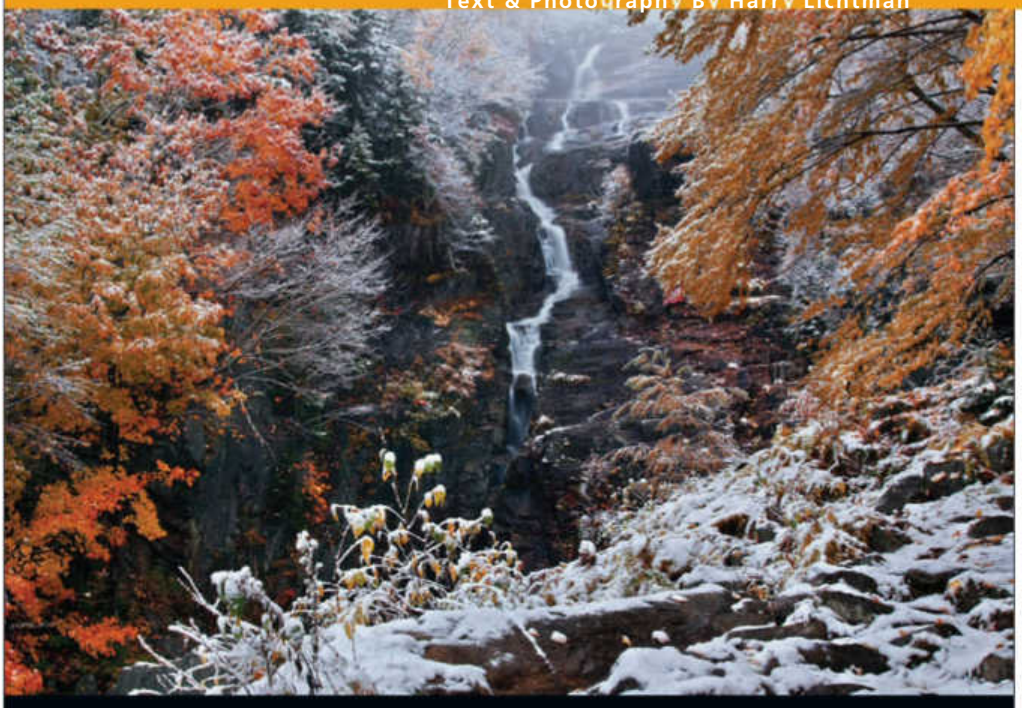
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Text & Photography By Harry Lichtman

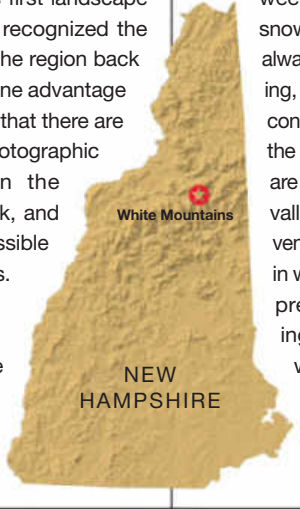


CRAWFORD NOTCH STATE PARK

White Mountains, New Hampshire

Location

Crawford Notch State Park is located in the heart of New Hampshire's White Mountains, sandwiched between Franconia Notch to the west and Pinkham Notch to the east. This is a classic U-shaped glacial valley bisected by Route 302 connecting North Conway and Twin Mountain. Samuel Bemis, possibly America's first landscape photographer, recognized the raw beauty of the region back in the 1840s. One advantage of the Notch is that there are a variety of photographic options within the 5,575-acre park, and it's easily accessible by road or trails.



Weather

Like any alpine area, weather conditions can vary greatly by season and even day to day. Mount Washington is close by, and so is the notoriously windy and extreme weather. Summer temperatures can range from the low 50s in the morning to the 80s by afternoon. Fall begins in mid-September along with the arrival of the first frost. Autumn colors usually hit their peak between the first and second week of October, and snow during this time is always a possibility. If hiking, temperatures can be considerably colder atop the nearby peaks, which are 3,000 feet above the valley floor. Those who venture through the park in winter should be well prepared for blowing snow and brutal wind chills, as temperatures regularly dip into the single digits. Detailed weather and trail conditions can be found through the Mount Washington Observatory website and related links.

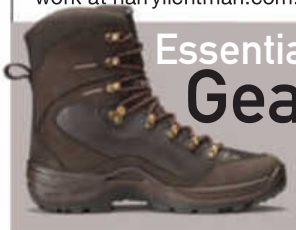
Photo Experience

Expansive views of towering cliffs and granite outcrops will immediately grab your attention as you head up through the park. The Notch is home to the state's most impressive waterfalls and shouldn't be missed. Arethusa Falls drops approximately 140 feet, while nearby Ripley Falls tumbles 100 feet over smooth granite. While these require short hikes, Silver Cascade near the top of the Notch can be photographed from the road. Still mornings are best for alpenglow reflections at Saco Lake and Willey Pond. Every year, visitors are injured or killed slipping on the wet rocks of this waterfall, so be careful and wear the proper footwear should you decide to venture near the cascades. Wide-angle to mid-range zooms are best for photographing waterfalls (17-120mm range). Use a polarizing filter to reduce glare from the wet rocks and foliage. ND filters might be helpful to reduce shutter speeds when photographing water in bright light. Bear and moose are always a possibility, so have a long lens in the 100-400mm zoom range handy. A sturdy tripod completes the essential gear.

Best Times

Waterfalls will be at their height in May and early June as the new foliage appears. Autumn colors in the Notch are among the best in New Hampshire, and I prefer this season, as there's also a chance for a dusting of snow on the crags and high peaks. Visitors have dwindled and wildlife sightings increase. OP

Contact: Crawford Notch State Park, nhstateparks.org; Mount Washington Observatory, mountwashington.org; Appalachian Mountain Club, outdoors.org. See more of Harry Lichtman's work at harrylichtman.com.



Essential Gear

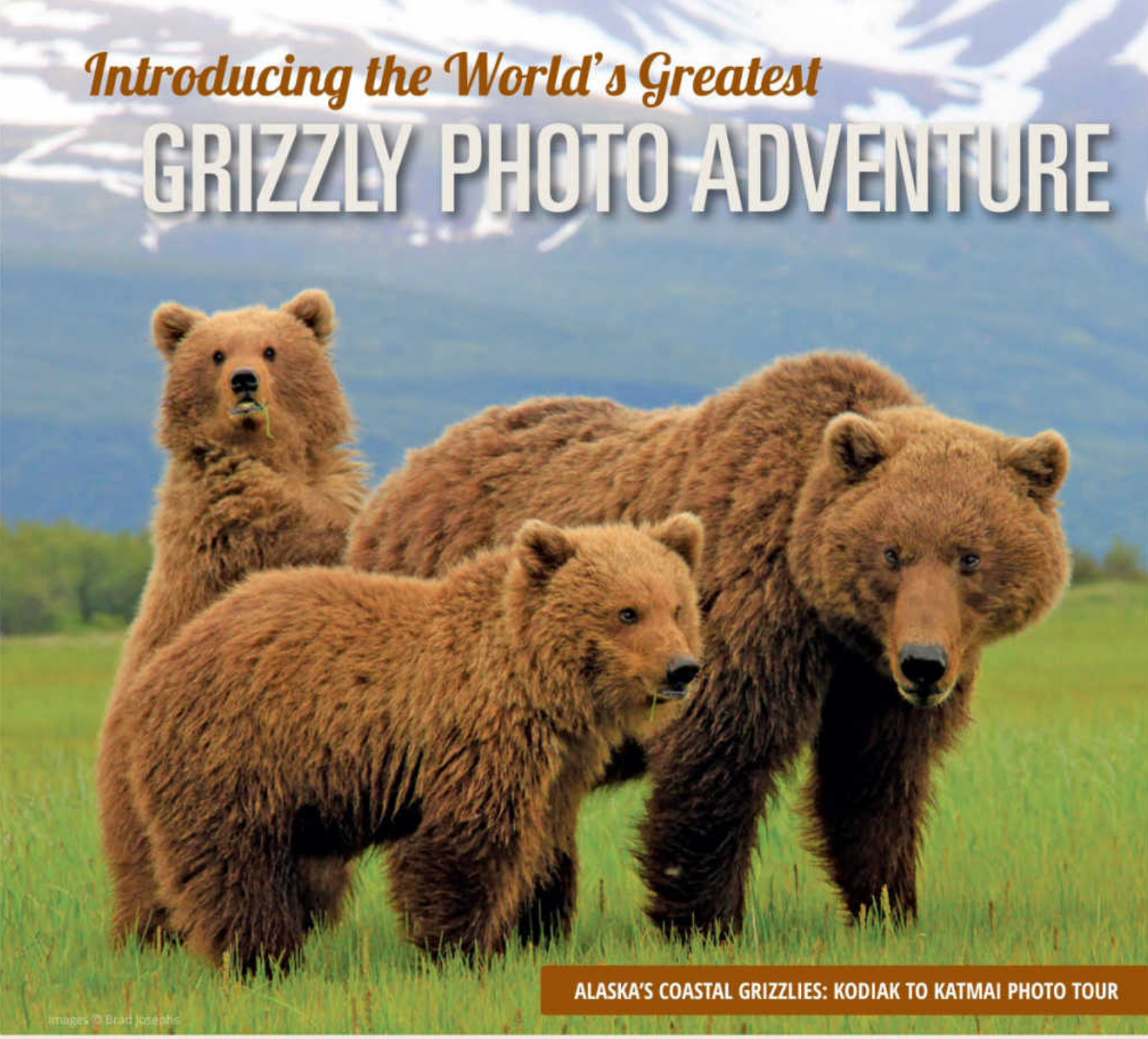
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Robert OToole

Nikon D810, Sigma 150-600mm F/5-6.3 DG OS HSM | Sports @ 600mm. Exposure: f/7.1, 1/500 sec., ISO 3600, handheld.

Extreme Telephoto Reach!

Sigma's 150-600mm F/5-6.3 DG OS HSM | Sports and Contemporary zooms set a new standard for telephoto lenses

For Sports and Wildlife Photographers, Sigma offers a pair of hyper-telephoto zoom lenses that make it possible to get close to the action without disturbing your subject, with image quality and performance that once was the exclusive domain of big, bulky prime lenses. The Sigma 150-600mm F/5-6.3 DG OS HSM | Sports and Contemporary lenses redefine long-reach outdoor photography.

Both lenses share champion DNA, including Sigma's exclusive class-leading features like the innovative zoom lock, which can be set at all marked focal lengths, Optical Stabilizer with accelerometer for vertical and horizontal panning, exclusive lens customization, including AF speed enhancements, custom focus limiters, 16 zone microfocus and Manual focus override with the optional USB Dock. And like all new Sigma lenses, every unit is individually tested on the super-resolution A1 MTF device to ensure the legendary optical characteristics of the Sigma Global Vision lenses.



Photographers looking to lighten the weight and size of their systems without sacrificing focal range and image quality will find these lenses offer a more versatile telephoto range than what's available in a single, bulky prime lens, and that's easily packable in carry-on baggage.

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Sigma's 150-600mm F/5-6.3 DG OS HSM | Sports and 150-600mm F/5-6.3 DG OS HSM | Contemporary not only offer an ideal range in a light and durable design with superior optical performance—they're affordable, too, at $1,999 and $1,089, respectively.



The Sigma 150-600mm F/5-6.3 DG OS HSM | Contemporary *(right) offers an incredible telephoto range in a compact, lightweight design if you're looking to travel light without sacrificing range.*

The Sigma 150-600mm F/5-6.3 DG OS HSM | Sports *(far right) features two premium FLD glass elements for the ultimate in optical performance and superior light transmission.*

FOR MORE INFORMATION, OR TO BUY ONLINE, VISIT WWW.SIGMAPHOTO.COM.

It could be argued that Grant Gunderson's photographic philosophy boils down quite simply: His goal is to have fun while making never-before-seen images. Seemingly born with a deep love for snow skiing and mountain biking, he has turned these passions into a thriving career. Still, he's careful not to let the hard work outweigh the adventure.

"I make sure my work is fun, obviously," he says. "I tell everyone I can make a helluva lot more money doing anything else besides photography. I have an engineering degree that I could use, but never have. I do this because it's fun, and I'm passionate about it, and I want to be out there doing it. If we're not having fun, we're done for the day. There are always a handful of days during the year when it's going to be great skiing, and I'll say, 'I don't care how great it's going to be to shoot today, we're going skiing.' And I leave the camera bag in the truck."

Gunderson's fun-loving demeanor is more than just lip service. He actually has kept himself from plunging headfirst into more mountain biking assignments—a relatively new addition to his portfolio—for fear that this personal passion might turn into just another job. But when biking clients see the quality of his work, they inevitably want more.

"It's the only thing I've found that gives me the same rush as skiing," he says of mountain biking. "I've gone all winter skiing, the last thing I want to do is turn my summer passion into a full-time job, as well. I've really been resisting it, and it's at the point now where I'm, like, okay, it's time to do this."



BIG AIR, DEEP



Mount Shuksan, North Cascades National Park, Washington. "My personal motto has always been, 'If I can create images that make myself or the general public want to spend time in the mountains or want to go ski or mountain bike, I'm going to be successful.' That's the kind of stuff we're always looking for. What's going to entice a skier or mountain biker to want to go do it? Most of the brands that I work with really understand that."

POWDER

Grant Gunderson's epic ski photography comes from a passion for the sport

BY WILLIAM SAWALICH

PHOTOGRAPHY BY GRANT GUNDERSON



Know Your Sport

One look at Gunderson's beautiful images, and it's clear why clients keep calling. It's not just his knack for capturing peak action and decisive moments, it's his ability to put the athlete in context—to show a beautiful forest or mountain scene with an athlete in motion. It's an approach he was fortunate to pick up early on.

"I think skiers have always enjoyed seeing the mountains and the environment," says Gunderson, "and there just so happens to be a skier in there. I'm usually selling an escape. I've found there's a lot of interest from skiers on the East Coast, places where there's not the best skiing. It's the average skiers who want to go out West for two weeks a year."

No average skier himself, Gunderson made his name in the mountains as a kid growing up in Yakima, Washington, where he and his friends spent all their time skiing. They took turns photographing each other until it became clear that Gunderson's pictures of them were a lot better than their pictures of him. He was a natural, both on the skis and with the camera. In college, he sold his first photographs and was hooked.

"I was, like, 'Wow, I can actually make a living doing this,'" he says, "and it pretty much beats the hell out of being an engineer and sitting behind a computer all the time."

Break From The Pack

Gunderson founded *The Ski Journal*, where he served as photo editor for six years. It became an opportunity to surround himself with the world's best ski photography. He studied the images closely, learning key lessons.

"As a photo editor," he says, "I've seen so many images come through, it all starts to look the same. Unless it stands out, it's not going to get picked up. That's why I have a lot of motivation to try to do stuff that's different. For me, it's about wanting to create an image that someone hasn't seen before. It's really easy to go out and create really beautiful images in the mountains because the mountains themselves are beautiful and



Rutherford, Whistler, British Columbia, Canada. "This image is out in the backcountry, and we had known about that spot for a few years, but it wasn't really in the best shape to go do it safely. We happened to be out that day and the conditions were pretty much perfect, the avalanche conditions were very low. We had been in that area for a while so we had a history of the snow and we knew it was steep enough that the top layer of snow was going to slide very little, only three or four inches of snow that actually slides. So we knew we would get a little bit, we knew it would be dynamic-looking, but the risk of avalanches was one of the big barriers. It's probably 60 feet, and from that situation—and it's not just me and Josh, we have four other guys there—in case something happened, we had a rescue team with us, basically."

Mount Baker, North Cascades, Washington. This is one of the very few shots for which Gunderson used autofocus. "On that particular shoot, I was working with a film crew at the same time, so it's a lot harder to set up one still shot that way. I was shooting a lot more autofocus because the action is a lot longer. For me, it's all about the 1/1000th of a second, it's got to be perfect. For them, they need the lead-in, the pre-action, the lead-out, so it can blend together. Because we're shooting a much longer lane, or much longer period of skiing, I'll do a lot more of autofocus and follow focus to make sure I'm not missing a secondary moment, and sometimes the secondary moments are just as good as the primary."



all you have to do is show up. But, you know, how can I do that in a way that hasn't been done before? For a while, I was looking at skateboard imagery where they were using a lot of flash, and no one had tried to bring big flashes into the backcountry. So we were dragging 25-pound Elinchrom flash packs into the backcountry with us to shoot. Then, as soon as I noticed the rest of the competition was starting to do that, I started doing a lot less of it and I went on to doing other things. I'm always trying to come up with something that the rest of the guys aren't doing yet, and try to be a step or two ahead of the field.

"The biggest advice I can give," Gunderson adds, "is to try to be cre-



Revelstoke Mountain, British Columbia, Canada. "Everyone always asks what my favorite lens is, and I always tell them my favorite lens is the best one for the job because it always changes. I own pretty much everything Canon makes, as far as lenses go."

ative and come up with your own style, your own look. That's what it's going to take to be successful. If you just go out and copy an image that's beautiful, it's already been done and no one is interested in purchasing it. It's constantly trying to be creative and come up with something new. I always look at what other photographers are doing—not to copy them, but to know what's going on so that I can do something different."

One particularly different technique Gunderson has employed is black-and-white imagery. It's not something that's seen very often in sports—snow skiing, in particular.

"Skiing is very beautiful in color," Gunderson says, "and everyone really wants to shoot in color. It's bright skis and bright jackets. That's what was cool with the flash; in these dark and stormy environments, I could get really vibrant color. But once everyone else started doing it, I said, 'What can I do that would be different?' So I went on a big black-and-white kick and shot almost all black-and-white for a year. When you shoot in black-and-white, you have to think more in tonal range than you would otherwise. I think doing that has helped me going back and shooting color since then. I think about it both ways now."

Think Safety First

The main thing Gunderson is thinking about during any shoot isn't photographic at all, and it's not particularly about having fun, either. Mainly, Gunderson is concerned with trying to keep himself, his crew and his athletes safe. It's the number-one priority in the mountains.

"I think experience allows me to make safer decisions easier in the backcountry," he says. "It's easier for me to walk away from something that's not safe. I think that's a skill that's very important. I'm glad I finally developed it. A wise old mountain man told me when I was really young that you start your time off in mountains with a handful of luck and hopefully get a handful of knowledge before that wears out. That's definitely true. Safety is a big factor, especially with avalanche conditions. Speed, a lot of times, goes with that. If I save some weight in the bag, I could get in and out of what could be a crush position way faster and minimize my time and risk.

"I see a lot more people going out and trying to do what we're doing," adds Gunderson. "That really weighs on me. I think they see these beautiful shots, or they see this amazing footage in a ski movie, but they don't realize the support network that we've developed behind the scenes to produce an image. For example, everyone that I work with carries a VHF radio, and I've developed relationships with the ski patrol where, if there's an accident, I can immediately talk to them. If we're in the backcountry, I can immediately call up a helicopter for a rescue, or if we're at a heli-ski operation, I'm going to be directly with the pilots so they all know we're on the same page. The average Joe doesn't know that."

Protect Your Gear

The other safety issue Gunderson faces, while certainly less serious than life or death, is no less important to the functioning of a photography business.

Grant Gunderson's Gear

Canon EOS-1D X
Canon EF 16-35mm ƒ/2.8L II USM
Canon EF 24-70mm ƒ/2.8L II USM
Canon EF 70-200mm ƒ/2.8L IS II USM
Canon EF 400mm ƒ/5.6L USM
Canon TS-E 90mm ƒ/2.8
Canon EF 85mm ƒ/1.2L II USM
Canon EF 15mm ƒ/2.8 Fisheye
Elinchrom Ranger RX Speed AS strobe packs with Type A heads
PocketWizard transceivers
F-Stop Satori packs

Working in cold, snowy conditions can be perilous for camera equipment, too.

"Moisture is a bigger issue than cold," Gunderson says. "Basically, if my gear is cold, I can't unzip that pack until I'm done for the day. So, if I come inside, that pack either stays outside someplace safe, or if it comes in with me, it doesn't open up until we're done for the day. I've tried using various tricks in the past, putting stuff in Ziploc® bags, then opening it up gradually, but once you open it, it's done.

"I've gone through a lot of camera bodies," he continues. "I was still shooting the 1D Mark IV when I actually ruined two camera bodies in one day. That was a very expensive day. I try to keep everything zipped up to minimize the amount of snow that gets into the camera bag. The other thing I'll use is basically jackets on the cameras. For a while, I would make my own. Then I found out OP/TECH makes really good jackets for the cameras. And it's definitely cut down a lot on the amount of cameras I go through. Now I'll wear them out before the moisture destroys them."

Follow The Light

When he's not fighting with the weather as it's trying to destroy his gear and drive him off a mountain, Gunderson is battling changing light. There's always too much or too little, and only rarely is it just right.

"Shooting skiing," he says, "the biggest thing you're dealing with, photography-wise, is that you have too much light. With mountain biking, it's the exact opposite because you have too little light. The best mountain biking seems to be deep in the forest. So the best days to shoot are overcast, gray days, more consistent light, but there just isn't much of it. But the thing with snow is, if you have too much light, it means you probably have too much sun, so it's not going to be good for skiing anyway. With skiing, good snow tends to follow good light. We're kind of looking for a combination of both. The challenge with skiing is that you can set a shot up, but you only get one chance, so if the athlete misses the mark or the flash doesn't fire, all that setup work is done and you have to move on. It's a pretty fast pace of constantly trying to be following the light and being productive at the same time." **OP**

*To see more of **Grant Gunderson**'s work, visit grantgunderson.com.*



Laguna del Inca, Andes Mountains, Portillo, Chile. "That was kind of a funny deal," says Gunderson of this image. "We were on a photo shoot at a place called Laguna del Inca, which is right on the border of Chile and Argentina, pretty high up in the Andes. That particular summit, when we were down there, didn't get any snow, and it's, like, what are you going to do? You can't ski without snow. We found out that the owner of the resort had sea kayaks on the lake in the afternoon, so we commandeered them and took them across the lake to find some snow. I was pretty happy they were yellow and orange, but I was even happier that I didn't tip the kayak with the camera and all my gear in it."



Heli-Skiing in Seward, Alaska. Even when on high-profile commercial assignments, Gunderson usually works solo, without a big crew. "Ninety percent of it is me and two or three athletes. A lot of times, in the backcountry, it's just not safe to bring in a big production team. Definitely there have been times where I've worked with 30 people, but that's in a way more controlled environment, closer to the resort, in bounds, where ski patrol is going to make sure everyone is safe. Most of the stuff I do is deep in the backcountry, where you can't bring a big crew of people."



Quiet Landscapes

"Music is the space between the notes."
—Claude Debussy

BY KEITH S. WALKLET | PHOTOGRAPHY BY KEITH S. WALKLET AND ANNETTE BOTTARO-WALKLET

Winter images that capture the contemplative nature of the season

Winter is a season of silence, where one celebrates absences and delights in solitude. It's a season of long shadows, simplicity and space, of energy and magical transformation.

It's no secret among friends that my wife and I are most comfortable apart from the clatter, and rarely are found crossing tripod legs at popular vistas, so it's natural that winter is our ally, a coconspirator in dalliance, delay and quiet contemplation.

Granted, we had the good fortune to have a front-row seat to all its glory



Cook's Meadow, Winter Sunrise, Yosemite
Annette Bottaro-Walklet

The elm tree in Cook's Meadow strains under the weight of a heavy snowfall at sunrise following a classic winter storm in Yosemite Valley. An exotic planted by the park's early European settlers, the tree's spreading branches bear an uncanny resemblance to the profile of Half Dome, making it a popular visual accent year-round. There was at least a two-foot snowfall that made navigating with a view camera and photo backpack all the more challenging for Annette, who was up to her waist in the white stuff. But she was fortunate not to have to travel to be there. For the best results and fewest headaches, it's essential to be on location as the storm breaks, because in all but the rarest situations, the freshness is gone in minutes. With the advances in weather forecasting that do a much better job of gauging snow-lines (the elevation where it will snow), it's possible to better anticipate what's coming and secure accommodations before the storm arrives.

Toyo 4x5, 90mm Angulon, Fujichrome Velvia

Aspen Trunks and Shadows, Grand Tetons | Keith S. Walklet

The warmth and low angle of the late-afternoon light in Grand Teton National Park transforms a clone of aspen into a painterly scene of color and form. With the low angle of light, the absence of foliage and a white canvas to paint on, winter is the season of shadows. Tightly framed to eliminate any distractions, this image of aspen trunks is simply a collection of lines and shapes. Viewed straight on, the lines would have all been vertical, but by shifting around off-axis, the vertical shadows climbing the slope become diagonal, introducing depth and dynamism. There's a color relationship at work, as well, when the sun is shining. Cool, blue shadows contrast with the warm color and temperature of direct sunlight.

Pentax 67, 135mm, Fujichrome 100



for 14 years as residents of Yosemite National Park, and we had the luxury of time to get to know our home intimately, how the light moved through the day, the cycle of the seasons and the mechanics of storm behavior. Those moments, some captured with our cameras, and many others simply recorded on "neuro-

Elm and Snowstorm, Cook's Meadow, Yosemite | Keith S. Walklet

Weather makes for dynamic conditions—if one can shelter equipment and focus on creativity. Blizzard conditions in Yosemite hide the valley's immense granite walls and reduce the color palette to shades of gray. Wild weather can transform recognizable objects like the pines and famous elm tree of Cook's Meadow into nothing more than a celebration of pattern and texture. A long lens compressed the scene, and a fast shutter speed froze the oversized flakes between the photographer and the trees, creating a screen through which to view the scene. Pentax 67, 300mm, Fujichrome 100



Hoar Frost, Rose Hips, Idaho
Keith S. Walklet

Frost coats a thicket of wild roses mid-winter in the Boise foothills. In a frosty or snowy landscape on an evenly lit day, hints of color peeking out of what appears to be a black-and-white scene can surprise the viewer, who at first glance might be lulled into thinking the image is monochromatic. The soft light of open shade makes it easy to see into the shadows and appreciate the delicate lines that are the essence of the image.
Pentax 67, 135mm, Fujichrome 100

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Frosty Cottonwoods, Cathedral Rocks, Yosemite
Keith S. Walklet

It's the freezing and thawing of snow in the valley that leads to the growth of ice crystals on the grasses and, in this case, cottonwood trees. As snow on the ground melts in the daytime, it introduces a lot of moisture into the air. When temperatures drop overnight, the moisture condenses into clouds of fog and then freezes on the twigs. Repeated cycles of freezing and thawing can result in ice crystals four to five inches long. "Echoes," similar shapes or patterns that are repeated in a scene, are always interesting to me. In this case, I chose to highlight the relationship between the irregular surfaces of the cliff outlined by snow and the filigree of frosty cottonwoods in the foreground. As is often the case, I've cropped out the sky, creating an illusion that the cliff is even higher than it is.

Pentax 67, 135mm, Fujichrome 100

Snow Shadows
Annette Bottaro-Walklet

Buried beneath nearly two feet of snow, the irregular surface of a meadow is reduced to a series of gentle mounds with dappled shadows from nearby trees. Intrigued by these sylvan shapes and the quality of light, which was bright, but diffuse, Annette used a 200mm focal length to isolate simple shapes. The resulting combination reminded her of the ropy sections of a flowing river.

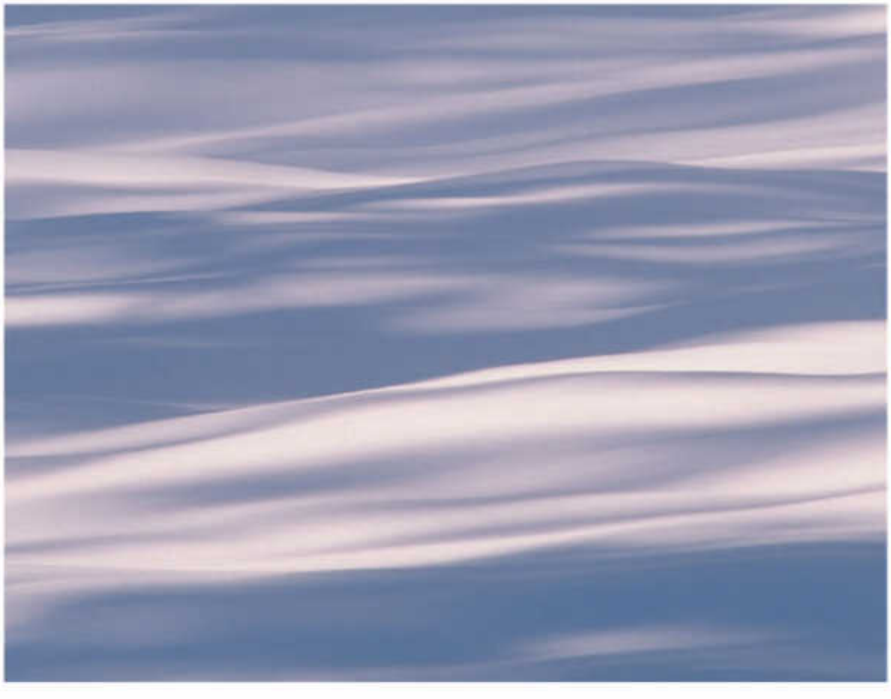
Nikon F3, NIKKOR 70-200mm, Fujichrome 50

chrome," are now woven into our DNA.

We're quiet by nature, and winter, more than any other season, speaks to us. The transformations that happen over the course of days, hours or even in minutes make it easy to maintain a sense of wonder, and inspire reverence and, occasionally, the desire to do nothing but curl up with a mug of something warm and just watch in awe.

We both revel in the silence, the serenity and the slower pace of winter, which makes it much easier to appreciate special details, whether it be the gentle bend of snow-laden branches or intricate patterns in ice. Though many of our earlier images can be considered iconic, we aspire to be more poetic than documentary. **OP**

*To see more of **Keith S. Walklet**'s and **Annette Bottaro-Walklet**'s photography, visit quietworks.com.*



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Kohl Christensen riding a mountain of water on a chaotic day at Pipeline on the North Shore of Oahu, Hawaii.

A few years ago, while shooting big-wave surfing, I captured a remarkable image of pro surfer Kohl Christensen riding a mountain of water on a chaotic day at Pipeline on the North Shore of Oahu, Hawaii. Normally, when shooting surfing, you're looking for a clean wave, without any whitewash contaminating the wave face itself. In this image, and on this wild and windy day, the surfers were trying to catch any decent wave they could, and the wave Kohl caught turned out to be quite interesting because of the backwash that was pulled up into the wave face. The spray flying off the top of the wave, combined with the messy look of the wave, is what makes this image work.

This image was shot with a Nikon D4 and an AF-S NIKKOR 200-400mm *f*/4G ED VR II, which was mounted on a huge Gitzo tripod with a Wimberley head. This image was intentionally shot pulled back at around 290mm, so I could show the huge wave and put the surfer in context with the surroundings. I shot over 3,000 images that day, and this is the one image that really stood out from the rest. Last fall, this image was chosen by Apple to promote the cutting-edge 27-inch iMac with 5K Retina display. It appeared on their website as a full-screen image on a 5K Retina iMac showing off the high-res quality of the monitor. So, if you think you've seen this image before, the odds are very good that you have.

The Importance Of Post

Once the image was captured as a RAW image, the process is only halfway done. As I teach in many of my workshops, and as I espouse in my recently updated digital workflow ebook, *A Professional Photographer's Workflow: Using Adobe Lightroom and Photoshop*, the postprocessing of an image is anywhere from 40% to 50% of the imaging process for my work. How the image is processed has a huge effect on how it's perceived. I'm not talking about doing anything wild and crazy with the image—by that, I mean that to really make the image shine and look just as it did on that day takes some work in postprocessing. As this is a fairly short article cover-



The Postprocessing Pipeline

From raw image to radical results with Lightroom and Photoshop

TEXT & PHOTOGRAPHY BY MICHAEL CLARK

ing a lot of ground, I can't go into how every slider in Lightroom works, nor can I cover in minute detail the adjustments made to this image in Photoshop. For the full story, check out the book.

As you can see in Figure 1, when this image was imported into Lightroom, it was dull and muddy. There are a few reasons for this. One reason is, there's about 500 feet of haze from the ocean spray between my position and the surfer, and the other is that I purposely have my camera set to shoot in RAW mode with a neutral color and contrast setting so highlights aren't blown out in high-contrast shooting scenarios.

As a side note, I must mention that to get the best results when postprocessing images, a color-calibrated, top-notch monitor and a well-thought-out workspace are requirements if you want consistent and accurate color. I calibrate my Eizo CG243W monitor, which shows 98% of the Adobe RGB color space and is fine-tuned to be accurate from corner to corner, with an X-Rite i1Photo Pro 2 monitor calibration device. In my experience, Eizo and NEC make the best monitors I've seen for the color-accurate needs of photographers. Because we're going to adjust our image visually, this is a key step in any digital workflow and one of the most important aspects of digital photography. In fact, I'd say having your color management dialed in is more important than the lens or camera used to capture the image. If you aren't seeing accurate colors on your monitor, then working up your images is a waste of time.

When processing images, I'm typically trying to replicate the scene as I saw it with my eyes. Hence, I'm looking to replicate the white balance, tones, contrast and overall scene faithfully before I start thinking about how I can add graduated filters or vignettes to help my viewer make sense of the scene. I also want to make clear at this point that I don't consider myself a photojournalist. For some assignments that are more photojournalistic in nature, I won't add or remove anything in the image that wasn't there. But, for most of my work, which is normally used for commercial advertising, I'll make subtle tweaks to help direct the viewer's eye to where I want them to go in the image. For this image, you might already have noticed there are two other surfers swimming in the foreground. Those surfers were distracting from the surfer on the wave, so I removed them in Lightroom.

Adjustments In Lightroom

The goal in Lightroom is to bring back the contrast and saturation in the image, and also to dial in the color balance. As seen in Figure 2, I set up the Lightroom Develop module to show the image as large as possible, and I've pulled out the right-hand panel as far as it will go so the sliders are less jumpy and allow for more precise adjustments. I always have the Histogram visible at the top of the right panel, and I work from the top of the right-hand panel downward as I work up the image.

If the white balance in the image looks fairly accurate, I usually skip over the White Balance sliders and start by adjusting the Tone and Presence sliders in the Basic dialog. The reason I skip over the White Balance sliders is that the Tone and Presence sliders will affect the white balance, and if I set the white balance right off the bat, I'll have to come back and tweak it again after adjusting the other sliders in the Basic dialog. For this image, I ended up leaving the white balance as it was shot since it looked fine and didn't need any adjusting.

As you can see in Figure 2, I brightened the image slightly by moving the Exposure slider to +0.70 and boosted



FIGURE 1

This is the image as it appeared just after importing it into Lightroom. As usual with RAW images, they sometimes look rather dull when first imported into Lightroom. This image was shot in a neutral color mode where the contrast and saturation settings in the camera were turned down to the lowest settings so that highlights are protected and I have a solid base image with as much dynamic range as possible to work up in postprocessing.



FIGURE 2

This is the image as it was worked up in the Lightroom Develop module. Also visible are the adjustments I made to the Basic and Tone Curve sliders to boost the contrast and saturation in the image.

the Contrast significantly (+49). Generally, with the Tone sliders, I massage the highlights and shadows in the image with the relevant sliders. For this image, the highlights were pulled down slightly and I pulled the Shadows slider out quite a ways to open up the hard shadows since the wave was backlit by the afternoon sun, to some degree.

The Whites and Blacks sliders were used to adjust the end points of the histogram. I try to stretch the histogram out so there's a full tonal range of colors in the image, which may mean the white and black points in the histogram are at the edges of the histogram, or as with this image, that the image looks normal. For my work, and to create the best possible image quality, I have to finish working up every image in Photoshop so I can extremely accurately set the black and white points of the histogram with a Levels adjustment. In my experience, setting the black and white points of the histogram in Lightroom is a difficult process and isn't nearly as accurate as in Photoshop, partly because of the hybrid color space used in Lightroom and partly because there's no Levels adjustment option in Lightroom.

Once I had the Whites and Blacks sliders set, I added some Clarity and a bit of Vibrance to the image to give it a little extra punch and saturation. I always use the Vibrance slider before adding saturation with the Saturation slider. The Vibrance slider is a nonlinear slider, meaning that it saturates less saturated colors more than it does the already saturated colors. This helps to equalize the saturation of all colors in the image. The only hard and fast rule I have

The Dragon's Egg



Location: Moeraki Boulders, South Island, New Zealand

Nikon D810 | Nikkor 14-24mm @ 14mm
ISO 100 | f/14 | 10 seconds

LEE Filters SW150 Mark II Filter Holder, 0.9 ND Hard Grad + Little Stopper

The Moeraki Boulders in New Zealand offer an extraordinary array of potential compositions. This, combined with the magical light in the area, meant they had been on my 'must-shoot' list for a long time. When I finally got there, I felt the need to come away with something that was nothing less than spectacular.

As I set up on the beach, the sky began to turn red. I looked for a simple composition, and found it in the shape of this 'dragon's egg', which I placed in the lower left third. To capture the slow, receding movement of the sea, I would need a long exposure.

To achieve my desired result, I used my Nikkor 14-24mm lens and LEE SW150 Mark II filter holder with a 0.9ND hard grad to help stop down the sky, which in this case was at least 4 stops brighter than my foreground. This was then combined with a Little Stopper to increase my exposure time, giving me that soft minimal long exposure look that I love.

Being able to use the SW150 system on my 14-24mm lens means I can now perfect my long-exposure effects in camera, and only have to make minimal adjustments in postproduction.



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when processing images is not to take the Saturation slider farther than +15. If you pull it out farther than that, you're creating colors that will be very difficult, if not impossible, to reproduce.

I added a little midtone contrast to the image using the Lights (+9) and Darks (-5) sliders in the Tone Curve dialog. I didn't make any adjustments in the HSL/Color/B&W, Split Toning or Detail dialogs. Note that, in the Detail dialog, I left the Sharpening sliders at their default positions because, at this point in my workflow, I only want to add capture sharpening to the image. While there isn't room here to discuss a sharpening workflow in great detail, there are three steps in a sharpening workflow: capture sharpening, creative sharpening and output sharpening. Capture sharpening is sharpening applied to counteract the anti-aliasing filter that sits in front of the imaging sensor in most cameras and blurs the image slightly so digital artifacts like moiré don't show up in the image. Creative sharpening is adding sharpening to one part of the image to make it stand out, and output sharpening is applied after the image has been fully worked up and you're resizing the image for a specific usage, like generating a small JPEG or preparing the image for printing.

In the Lens Corrections dialog, I checked Enable Profile Corrections under the Profile tab, then set the Distortion slider to 0 so the image looks as it did to my eye through the lens. I backed off the Vignetting slider to keep some of the vignetting produced by the lens in the image. Under the Color tab in the Lens Corrections dialog, I checked Remove Chromatic Aberration to remove a tiny amount of chromatic aberration in the image. In the Effects dialog, I added a very subtle vignette to the image, as seen in Figure 3.

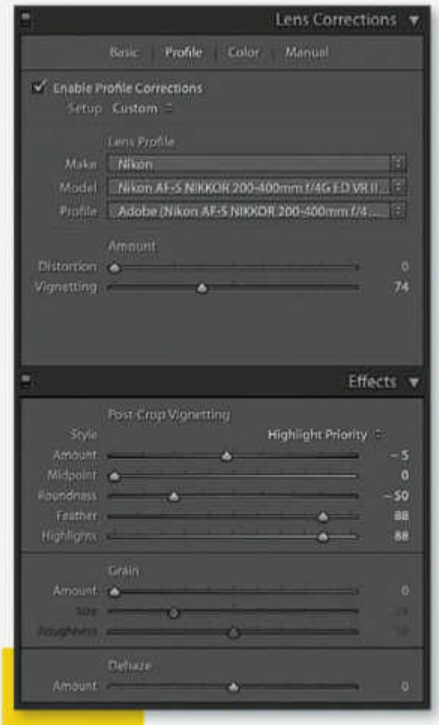


FIGURE 3 *In the Lens Corrections dialog, I checked Enable Profile Corrections and removed Chromatic Aberration in the Color tab (not shown). I also added a slight vignette to the image to help drive the viewer's eye toward the surfer.*

Going back to the top of the right panel, I used the Spot Removal tool to take out a few dust spots—these all appeared in the sky above the surfer. I also used three separate Graduated Filters to control the brightness of the sky and whitewater in the foreground of the image. In general, I use a lot of Graduated Filter adjustments in my images to help direct the viewer's eye to my subject. These Graduated Filter adjustments are quite subtle, and if you didn't know that I added them, you'd never suspect I was helping your eye go to the surfer. The Vignette and Graduated Filter adjustments are part of this creative method I use to massage the tones in the image.

That's it for my Lightroom adjustments. As I've already indicated, for my work, I find it critical to take the image into Photoshop and continue working it up there where, at the very least, I make a Levels adjustment and do any other retouching that might have been too difficult in Lightroom. When I export the image out of Lightroom, I export the full-size image as a PSD in 16-bit mode, at 300 ppi, in the ProPhoto RGB color space with no sharpening added.



FIGURE 4 *In Photoshop, I added a Levels adjustment layer with a layer mask, which allowed me to very accurately set the levels of the histogram, while the layer mask allowed me to extend the dynamic range of the image by pulling back in those areas that were clipped by the Levels adjustment. I also added a brightness/contrast adjustment layer, as well as a Vibrance adjustment layer.*



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RogueFlash.com



Here you can see the entire evolution of the image from start to finish. The top image shows how it appeared when imported into Lightroom, the middle image is with the Lightroom adjustments, and the bottom image is the final image with the Photoshop adjustments.

Adjustments In Photoshop

In Photoshop, my aim is to create a master image file, which will remain in the ProPhoto RGB color space. Once I have this file worked up, I can convert the file to any other color space, as needed, and make the necessary adjustments for any and all uses of the image down the road. I make all adjustments to the image using adjustment layers and duplicate layers. In the end, I save the PSD file with all of the adjustment layers along with the RAW image file.

When I pull images into Photoshop, they sometimes seem to have a haze over them that can be removed with a Levels adjustment. Because of that, my first adjustment in Photoshop is a Levels adjustment layer (Figure 4). Because we're now working in a normalized ProPhoto RGB color space, I can very accurately nail down the endpoints of the histogram. Basically, I'm pulling in the white and black points on the ends of the histogram in the Levels dialog to create a full tonal range. Of course, this depends on the image. If I'm working on an image that was shot on a foggy day, pulling in the white and black points in a Levels adjustment will remove a lot of that fog, which probably won't be what I want in that image. With this image, I pulled the far-right slider in the Levels adjustment from 255 to 245 so it just touches the right edge of the histogram. This forces the whitewater to be closer to pure white, and knowing some of that whitewater was certainly pure white to my eye when I saw this scene, that makes sense. For the Blacks slider on the far left of the histogram, I pulled that one over from 0 to 25. Note that for the Blacks slider here, I didn't pull it all the way over to where it touched the histogram on that side. The reason is that it started to make part of the wave on the far right side of the image much too dark for my taste.

The next adjustment I made was a Brightness/Contrast adjustment layer and, with this layer, I added a touch of brightness to the image. In my experimentation, adjusting the brightness of images with a Brightness/Contrast adjustment layer gives a slightly different result than moving the middle slider in the Levels adjustment layer.

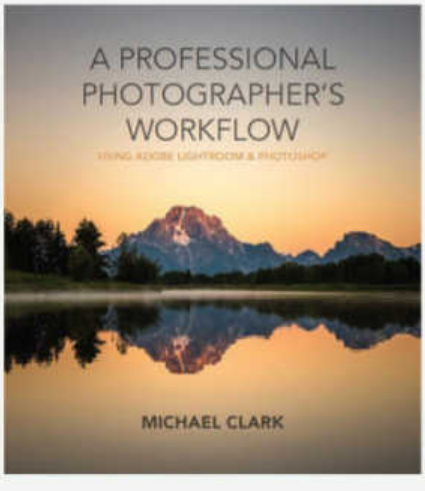
The last adjustment layer was a Vibrance adjustment layer. I pulled the Vibrance slider over to +20 to add back some saturation that was lost when I applied the Levels adjustment layer. I've found that if I apply a significant Levels adjustment layer in Photoshop, that often removes some of the color saturation in the image and I add it back with the Vibrance adjustment layer.

That's it. At this point, the image is ready to roll and can be converted to any color space profile needed and sent out to clients. Of course, I have a whole other workflow when converting to Adobe RGB and controlling the histogram so important highlights aren't clipped, but that's another article. I never send an image to anyone in the ProPhoto RGB color space. I always send images in the Adobe RGB color space, or if they're going to be used on the web, in the sRGB color space. Before sending the image out to clients, I typically make a print on either Ilford Gold Fibre Silk (my favorite paper) or Epson Proofing Paper Semimatte just to make sure the image will print well.

As you've seen, this image came a long way in postprocessing. This isn't unusual for surfing images shot from the beach, where there's a lot of distance and ocean spray between the subject and myself. The great majority of my images aren't this dull and washed out when they show up in Lightroom. I hope this example shows how postprocessing can bring an image to life and how much work is typically involved for even basic postprocessing. **OP**



***Michael Clark** has been a pro adventure sports photographer for nearly 20 years. A few of his clients include Apple, Adobe, Nikon, Microsoft, Nokia, Red Bull,* Sports Illustrated, National Geographic, Surfer, Rock and Ice*, and* Outdoor Photographer. *A beta-tester for Adobe Lightroom and Photoshop since 2006, his 497-page comprehensive ebook on digital workflow,* A Professional Photographer's Workflow: Using Adobe Lightroom and Photoshop, *is available at michaelclarkphoto.com.*







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TEXT & PHOTOGRAPHY BY ANDY LONG

Use custom function settings to fine-tune autofocus performance for your subject

There's nothing like coming away from a shoot knowing you've captured a potential once-in-a-lifetime shot. Too often, many write this off as luck. Luck, though, is when preparedness meets opportunity. Knowing equipment potential and subject behavior is a major component of the preparedness equation. Since getting my first camera body with custom AF settings, the Canon EOS 5D Mark III, I've been exploring all it has to offer. Its capabilities are way out there, and with certain settings, shots never thought possible before are reality today. If time is taken to explore and hone the skills necessary, magical images are sure to result.

Many professional and enthusiast-level cameras offer the ability to enable specialized camera performance settings using custom functions. For Canons such as the 5D Mark III, 1D X and 7D Mark II, there are preset Case settings in the AF menu that can be chosen for various types of action photography. These presets are good, but didn't offer the responsiveness I wanted to obtain certain shots.

While on Kodiak Island, Alaska, photographing brown bears catching salmon at the mouth of a river, a scenario was observed where the fish were jumping in particular areas. Keeping this in mind, I concentrated on getting a shot of a salmon out of the water, as well as a shot of a salmon jumping with a bear behind it. Not knowing if this would present itself, a custom AF was needed if the opportunity arose for getting this unique photo. Not only did I get one, I was able to capture this series of four using the Canon EOS-1D X body with its high fps rate.

First, some general wildlife action settings were programmed: Drive to Continuous High and Focus to AI Servo. A minimum 1/2000th of a second was desired for this trip so every water splash and detail would be sharp. Because this was an overcast day, ISO was upped to 1250 to maintain this minimum shutter speed.

Canon has put the Case functions under the AF menu tab. The configu-

ration has six icons, each representing an AI Servo setup to match subject movement for different scenarios. For example, Case 1, the default, has a runner icon, appropriate for most general action situations. All Cases contain three parameters: Tracking sensitivity, Acceleration/Deceleration tracking and AF point auto-switching. These six Cases are good, but there's a way to create Cases suited to your preference.

My new custom function allowed for a quick change from the subject originally focused on to something moving into the frame, making this shot possible. The other custom function I use stays locked onto the original subject, which would have made the fish out of focus, resulting in a throwaway image.

Creating A Canon Custom Preset

Choose Where To Put The Custom Preset. In choosing where to program this particular custom Case, I chose to overwrite Case 3. I also have a custom Case for birds in flight set on Case 2.

Custom Settings. For all preset Cases, Tracking sensitivity has a default of 0 or -1. Setting it at +2 causes the focus to switch from the original subject to whatever moves in front quicker. For Acceleration/Deceleration tracking, the presets are 0 or +1. Using +2 provides quicker sensitivity to a subject changing speeds, such as the salmon jumping out of the water. AF point auto-switching presets are also 0 or +1. Again, my preference is for the most sensitive at +2 so the camera switches AF points quicker when the subject moves off the original AF point. This setting only works when using Zone AF or the 61-point option.

Create A Custom Preset. Go to the main menu and scroll to the one to write over. Hit the Rate button on the left side of the back of the body and then the Set button in the thumbwheel. Turn the wheel to the desired setting and hit Set. Scroll to Acceleration/Deceleration, hit Set and turn the thumbwheel to +2 and hit Set. Do the same for AF point auto-switching, and the new custom Case is set.

Next, it's putting it into action in the field and coming away with a shot that has the wow factor you've always wanted to see in your files. **OP**

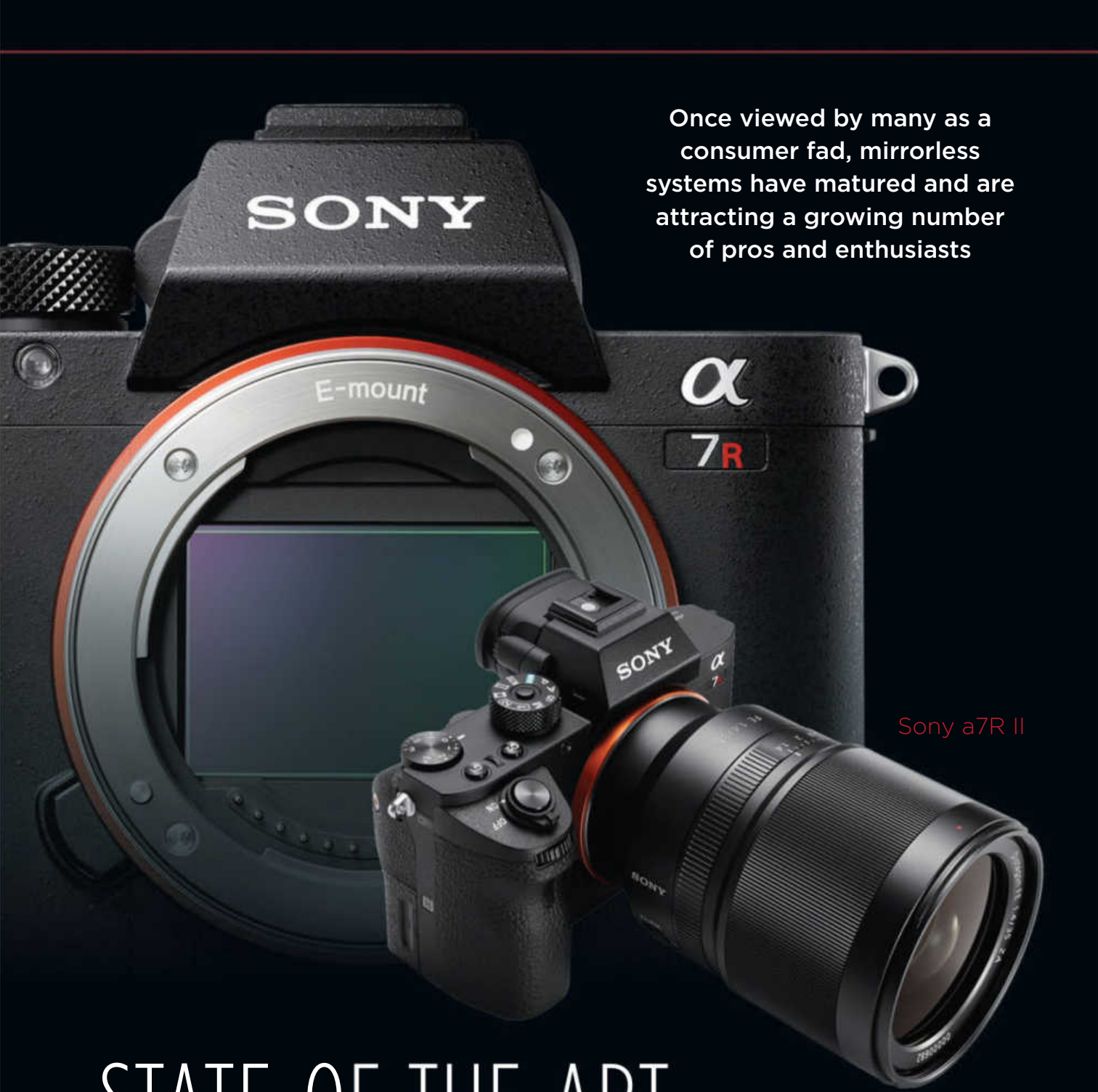
*To see more of **Andy Long**'s work and sign up for his workshops or newsletter, go to firstlighttours.com.*







Custom AF function settings in your camera's menu are available for various types of action photography. For specialized action sequences, like this series of images of a brown bear in Kodiak Island, Alaska, creating your own presets makes capturing especially challenging subjects less daunting.



Sony a7R II

Once viewed by many as a consumer fad, mirrorless systems have matured and are attracting a growing number of pros and enthusiasts

STATE-OF-THE-ART MIRRORLESS

BY DAVID SCHLOSS

It's a bit of a misnomer, the way we talk about a "mirrorless" camera, especially in the digital age. That's because the term "mirrorless" is used to indicate that these cameras aren't single-lens reflex (SLR). The SLR uses a mirror to send light to an optical viewfinder and then (when that mirror is raised) allows light to pass through to the imaging sensor.

Lots of cameras, then, are "mirrorless," from the camera phone to compact digital cameras to large-format film bodies. What mirrorless means in common use, though, is a camera that has the design and styling of a traditional SLR camera, but without the reflex mirror. It would be more accurate to call them "mirrorless SLR-looking cameras with interchangeable lenses," but that would be ridiculous. While some have advocated for calling them Compact System Cameras (CSCs), the term "mirrorless" seems to have stuck.

Many in the photo industry considered mirrorless cameras just a fad, little more than a fashion trend that celebrated retro looks, but provided little benefit to the serious photographer. That's because the first mirrorless cameras were really just scaled-up compact cameras, with interchangeable lenses bolted onto yesterday's technology.

Today, mirrorless cameras make up the most vibrant and, to some, exciting segment of the camera market. After years of evolution and a healthy dose of competition, mirrorless cameras are starting not only to catch up with DSLRs, they're starting to surpass them in terms of focus speed and accuracy.

They're also starting to mature, with distinctly different technologies focused on distinctly different segments of the market. For many photographers, the question now isn't, "Is mirrorless right for me?" but, "Which mirrorless system is right for me, and why?"

The product lines differentiate themselves—for the most part—based around the size of the sensor used in the system. Systems with 1-inch, Micro Four Thirds, APS-C and full-frame sensors are all available, and they all offer an increasing array of functionality, though with associated trade-offs.

That's not because the capabilities of sensors limit performance, but rather because the size of the sensor is the driving factor in the design of a camera. All the other engineering choices stem from the sensor at the heart of the camera, so when camera companies are looking to achieve something with their mirrorless systems, they start with the right sensor to accomplish their goals.

For the most part, each company has lined up behind a single sensor, though Sony has models based on two different-sized sensors, but with the same lens mount.

1-Inch

Cameras based on a one-inch sensor offer the greatest portability, but the lowest image quality—especially in low light. One-inch sensors are commonly found in compact digital cameras like the Sony RX100 and the recent Canon G3 X. They're designed to be small and energy-efficient, but their sensor size makes them poor performers in low light.

It's helpful to think of these as being on par with other compact digital cameras, with the benefit of interchangeable lenses. That makes them more versatile than compact digital cameras, though less portable, since the system lenses tend to be bigger than the built-in lenses on most compacts and lack the ability to retract into the camera.

Nikon has a large range of cameras in their Nikon 1 line, which includes eight palm-sized models that vary in price and features. The most basic model, the Nikon 1 S1, has very few manual controls or interface elements, while the Nikon 1 V3 looks like an itsy-bitsy Nikon DSLR.

Micro Four Thirds

Around a decade ago, Olympus and Kodak announced a camera system standard called Four Thirds, designed to reimagine camera design in the digital age. The first partners for the Four Thirds platform included Fujifilm, Leica, Panasonic and Sanyo, and others, and each partner was able to create bodies and lenses that would be interchangeable in the system.

Four Thirds cameras, which were DSLRs, didn't really take off, but the revised Micro Four Thirds (MFT) standard did. Introduced in 2008, the



Nikon 1 V3

standard has the same sensor size and lens mount specifications as Four Thirds, but the new standard did away with the mirror entirely, truly ushering in the era of mirrorless interchangeable-lens cameras.

The sensor in the MFT standard is about 30% smaller than APS-C, but much bigger than one-inch sensors. The primary design factor when the MFT camera system was created was portability. There was, at least in the first cameras, an image-quality penalty to using a camera with such a small sensor. Over the years, though, MFT cameras have become much more capable, delivering some stunning results in very small packages. Lens diversity has improved, as has autofocus speed, and the small size of the sensor allows today's modern camera processors to capture and process images at blazing speed.

The downside to MFT systems compared to cameras with a larger sensor (APS-C and full frame) is that they don't perform as well in low light, all other things being equal. Actually, they don't perform as well in bright light, either, from a technical standpoint, but it's less noticeable than the low-light images.

Most of the original partners in the Four Thirds consortium are no longer making products for MFT cameras (some, like Kodak, aren't really in business anymore). The remaining camera players—Olympus and Panasonic—have a huge array of cameras available from entry-level to pro.

New cameras in the Micro Four Thirds platform from Olympus include the enthusiast OM-D E-M10 Mark II and the upper-end OM-D E-M5 Mark II, which hides professional features in a retro body. Panasonic, which focuses a bit more on the video performance of the platform, released the LUMIX DMC-GX8, which features high-end 4K recording, including a mode for shooting video and capturing stills from it. The more compact DMC-GF7 is a portable body, with built-in flash and manual controls.

APS-C

The APS-C-sized sensor gets its name from a film format introduced right around the time that digital was born. APS-C was designed to provide a film cassette with a smaller form factor than a 35mm camera and an easier loading process. The combination was designed to create a smaller, lighter camera for enthusiasts and beginners. Unfortunately, for the format, digital arrived and eliminated the demand for APS-C film cameras.

Larger than Micro Four Thirds and smaller than full frame, APS-C straddles the middle of the two, while still offering some interesting advantages and keeping fewer of the penalties.

Since APS-C sensors are larger than MFT sensors, they can create images that exhibit less noise in low light and have wider dynamic range, but they still don't perform as well as a full-frame camera.

With the smaller size compared to a full-frame system, however, they can provide most of the image quality in a much smaller body. And since the APS-C sensor is smaller than a full-frame sensor, a powerful APS-C sensor can fit into a smaller camera body and the images can be processed more quickly. (Again, all things being equal.)

Canon has recently released their APS-C EOS M3 to the U.S. market—



Olympus OM-D E-M5 Mark II



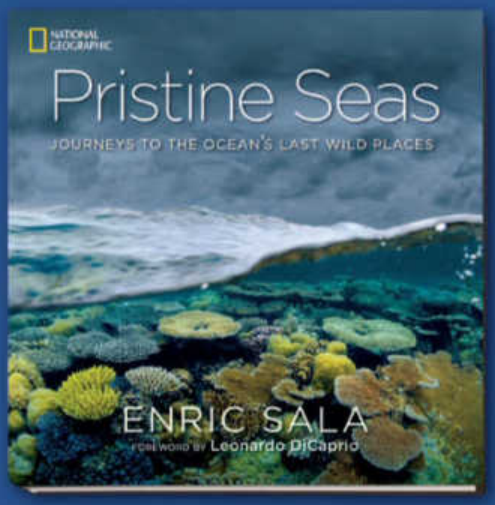






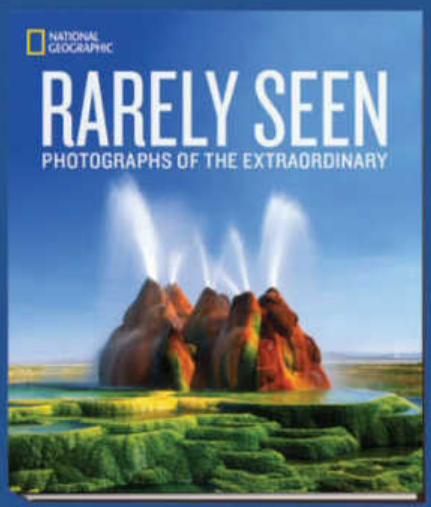
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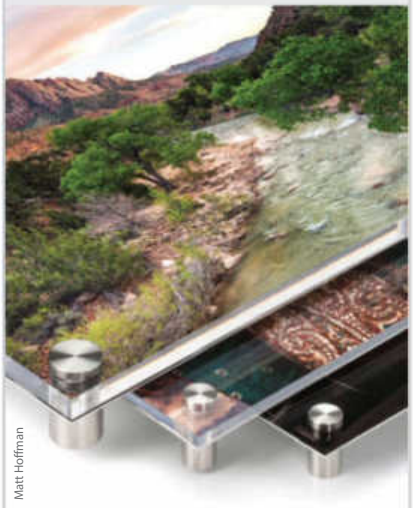
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Samsung NX500

the camera was previously only available in Europe—and joining it is the new entry-level M10 (available only as a kit with a zoom lens), which includes Canon's DIGIC 6 processor, improving the quality of JPEG images and video.

Samsung's latest mirrorless flagship, the NX1, launched in September 2014, though it really started to become adopted this year. The small camera can capture 28-megapixel images at 15 frames per second and clears the buffer at lightning speed. This year, Samsung announced the NX500, a scaled-down travel and go-anywhere body, with the same sensor as the NX1, albeit operating at a more "modest" 9 frames per second.

Until Samsung joined the APS-C market, Fujifilm was the primary name in the APS-C mirrorless market, with their impressive X-T and X-A lineup. The company has really dedicated themselves to creating cameras that appeal to the advanced photographer, with fully manual controls and their legendary Fujinon lenses. This year, the flagship X-T1 was updated with an infrared version, the X-T1 IR, but the star of the show is the X-T10, a compact travel body that doesn't skimp on features. The X-T1 is a favorite go-to camera for travel and street photography.

Sony also produces APS-C cameras, most notably the a6000, which, as of this writing, is still the top of Sony's APS-C lineup. The a6000 has long been rumored to be "about" to be updated, but the current body still provides superfast autofocus (it's often used by sports photographers). Sony also released the consumer-minded a5100, an update to the a5000 body.

Full Frame

Full-frame cameras, as the name implies, use the same full-sized sensor found in 35mm cameras. Full-frame sensors are traditionally found inside pro DSLRs. A full-frame sensor has better performance than smaller sensors at a given resolution, thanks to the larger pixels the sensor can contain.

Up until October of this year, there was only one manufacturer of full-frame mirrorless cameras, and that was Sony. The company has shaken up the photography market with a series of cameras using not only full-frame sensors, but as of this year, state-of-the-art sensors not even found in pro DSLRs. The backside-illuminated



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Mirrorless

(BSI) sensor in the a7R II has vastly better sensitivity in low light than similar sensors in the full-frame arena.

This year Sony released updates to all three of their full-frame systems, the a7 II, a7R II and a7S II. The a7R II is the company's pixel king, with a 42-megapixel BSI sensor, which gives it incredible low-light performance. The a7S II has a 12-megapixel sensor, which gives it even better low-light performance, and the a7 II, released earliest this year, set the stage with improved autofocus and five-axis stabilization now found across the second-generation a7 lineup.

Even better, adapters allow the Sony cameras to work with a host of lenses, including those from Canon, Leica and Nikon (with various levels of performance). That's good, because up until this year, Sony's lens selection was limited as the platform was rolled out. There's now a better range of lenses from Sony, Zeiss and others that natively work with the a7 cameras.

With Canon and Nikon sitting out the high-end mirrorless market (for now), Sony had a lock on the full-frame mirrorless segment—until Leica announced the new SL. A massive and powerful camera, the SL is more about performance than small size. The SL can capture 24-megapixel images at 11 frames per second, setting a record in full-frame image capture. At launch, there only will be a handful of lenses available for the system, though adapters will allow the Leica SL system to work with almost every Leica lens ever built.

This new full-frame system will shake up this market, providing some competition to Sony and making the full-frame mirrorless segment one to watch for the next few years.

Smaller, Lighter, Faster, Better?

While mirrorless cameras started off as more compact alternatives to DSLRs, the vast array of models and platforms has really allowed photographers to pick systems based on their particular shooting styles and needs. There's no such thing as a "bad" mirrorless interchangeable-lens camera, only models that have more or fewer of the features an individual photographer might need. **OP**

*You can follow **David Schloss** on Twitter and Instagram @davidjschloss*

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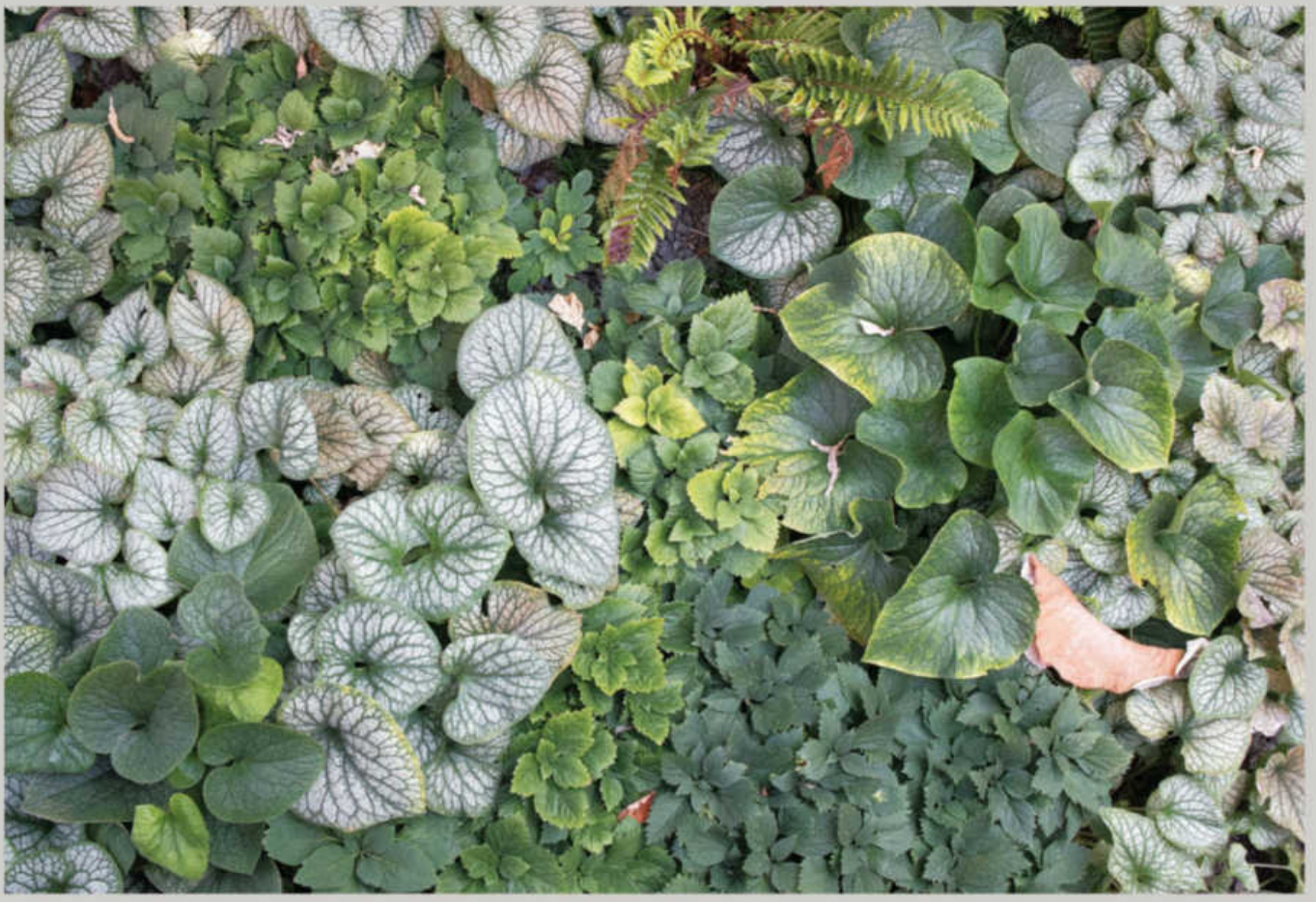
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TAMRON'S FAST NEW PRIMES

The first two lenses in an upgraded SP series feature close-focusing capability and premium construction

TEXT & PHOTOGRAPHY BY WES PITTS



The new SP 35mm exhibits excellent sharpness and color fidelity. This image was shot in RAW format, to which I made only minor adjustments to exposure and sharpness in Adobe Camera Raw. I tried boosting saturation, but reset it—the colors looked better as shot.
Nikon D750, Tamron SP 35mm F/1.8 Di VC USD, 1/50 sec., ƒ/16, ISO 2000

Tamron's premium SP lens line is getting an upgrade, and the first two models featuring the redesign were introduced this fall: a pair of fast prime lenses that are compatible with both full-frame and APS-C-sensor cameras. Both models, the SP 35mm F/1.8 Di VC USD and SP 45mm F/1.8 Di VC USD, are optimized to take advantage of the increasingly massive resolution of modern DSLRs. They're currently available in Canon and Nikon mounts, with a Sony mount to follow.

Used with a full-frame camera, these lenses offer a slightly wide (35mm) to standard (45mm) angle of view, and a standard (52.5mm) to mild telephoto (67.5mm) perspective with an APS-C-sensor camera. I had the opportunity to shoot with both lenses on both full-frame and APS-C bodies, and overall, I was impressed with their sharpness, clarity and color fidelity.

One of the first details you notice when handling the new lenses is the attention that was paid to ergonomics. They feature metal construction that's textured to feel almost soft, the result of a guiding design philosophy Tamron calls "Human Touch." You'll also notice a prominent new design element, the "Luminous Gold" ring at the base of the lens, another attribute intended to communicate that this is a premium lens.

Practical benefits of this attention to

detail are subtleties like the switches on the side of the lens that toggle Autofocus and Vibration Compensation. On many lenses I've used, these switches are relatively small and often require a visual check to be sure they're in the correct position. The switches on the new SP lenses are oblong and substantial, and click into place decisively, leaving no doubt as to their position without the need to take your eye from the viewfinder. The focus ring is also generously sized and smooth in use.

Though not true macro lenses, both feature close-focusing capability. The 35mm can focus as close as 7.9 inches (1:2.5 magnification), and the 45mm can focus as close as 11.4 inches (1:3.4 magnification). Tamron's Vibration Compensation is especially useful for handheld close-up compositions, where even a small amount of camera shake can obliterate sharpness. CIPA testing wasn't yet completed for these lenses at the time of this writing, but Tamron expects the VC system will provide between 3 and 4 stops of compensation.

The new SP lenses also feature moisture-resistant construction, and are weather-sealed at the lens mount and control switches for extra protection when paired with a similarly sealed camera body. The front lens elements have a fluorine coating to help repel water, dust and smudges.

One of the most compelling features of these new primes is their speed. With a maximum aperture of *f*/1.8, they offer versatility when shooting in low-light conditions or for compositions that benefit from a shallow depth of field. The nine-blade diaphragm produces a pleasing bokeh when shooting wide open.

If you're looking for a fast prime for landscapes and close-ups, Tamron's SP lenses are solidly built, ergonomically pleasing, and deliver crisp details and accurate color. List Price: $599 (each). OP

Contact: Tamron, tamron-usa.com.





The SP 45mm is equally sharp and color-precise. The fast f/1.8 maximum aperture of these lenses lets you achieve beautiful soft-focus effects and close-up compositions with shallow depth of field.
Nikon D750, Tamron SP 35mm F/1.8 Di VC USD, 1/2500 sec., *f*/1.8, ISO 640

LENS SPECS

Tamron SP 35mm F/1.8 Di VC USD

Maximum Aperture: *f*/1.8
Minimum Aperture: *f*/16
Minimum Focus Distance: 7.9 inches
Filter Size: 67mm
Length: 3.2 inches (Canon); 3.1 inches (Nikon)
Weight: 16.9 ounces (Canon); 15.9 ounces (Nikon)

Tamron SP 45mm F/1.8 Di VC USD

Maximum Aperture: *f*/1.8
Minimum Aperture: *f*/16
Minimum Focus Distance: 11.4 inches
Filter Size: 67mm
Length: 3.6 inches (Canon); 3.5 inches (Nikon)
Weight: 19 ounces (Canon); 18.3 ounces (Nikon)



PROTECTED PLACES

Photographing UNESCO World Heritage Sites

TEXT & PHOTOGRAPHY BY TOM TILL

The light had traveled for endless miles across the world's most fearsome desert to reach me. The clarified rays were a color of crimson I had never experienced. I was alone in the Nubian deserts of Egypt photographing the monumental and ancient Abu Simbel statues at dawn. Though I knew some of the history of this otherworldly ancient edifice, I didn't know that it had been preserved as the first gem on what would become the UNESCO World Heritage Site list—recognizing places both natural and man-made worldwide, that because of their power, beauty and history, hold importance to all of mankind.

Without really paying much attention, I learned I had been on a mission to photograph such places for years, selling the images as stock photography or as prints in my gallery to cover the costs. Almost every spot I determined as "world class" was on the list, which now totals over 1,000 places. Eventually, my images would become a traveling exhibit, which opened at the UN Office in Geneva. Other professionals, including David Muench, also have made photographing these stellar locations an important part of their careers.

Travelers, especially those from Europe and Asia, often plan their trips with visiting UNESCO areas in mind, and some countries vigorously lobby to get as many candidates as possible on the list. You can find information about the process and the program online in many places, including whc.unesco.org, but the most important thing you'll take away is that even with this protection, many UNESCO locales are in danger from development: air and water pollution, neglect, war, lack of funding and, ironically, visitation. Another thing you might take away is that the time to visit and photograph these amazing wonders is now.

You may even end up, like me, inadvertently creating images of places and things

that no longer exist. Rock art in Libya, for example, which I photographed, has been destroyed in the aftermath of the fighting there. One of the program's most important goals is to protect Earth's precious places from the ravages of war, but that hasn't always been possible.

My Favorite Lesser-Known UNESCO World Heritage Sites

In looking at the list of UNESCO sites, many will jump out as obvious photography bucket-list spots, but I've visited a few that are truly world class, but not so well known. (I've left out American sites, which are familiar to all.) They may have less infrastructure, but they're among the best photo destinations in the world and, I predict, all will be welcoming hordes of photographers in 10 years. Once again, the message is to go now.



LEFT: Pinnacles above Huangshi, Wulingyuan National Park, China
ABOVE: Giraffe petroglyphs, Jebel Acacus, Libya



ABOVE: Hardy Reef Marine Park, Great Barrier Reef, Queensland, Australia



ABOVE: Ait-Ben-Haddou, Morocco

1 Wulingyuan National Park, China

Right up there with Bryce Canyon and other great geology parks of the world, Wulingyuan already has been discovered by Asian photographers, and some American tour companies operate here. Weather changes frequently, providing a constant tableau of light and scene. This is a big park, with many facets, and going in the off-season is wise.

2 Lord Howe Island, Australia

This small island off the Australian East Coast is one of the world's most scenic islands. Though not part of the Barrier Reef, the beaches stand below a gigantic mountain that towers over this photographer's paradise. In season, you can do aerial photos of the island and its environs, including Ball's Pyramid, the world's highest seastack, rising abruptly out of the ocean to over 1,800 feet high.

3 San Agustín Archaeological Park, Colombia

Colombia is so close and its wonders so many, I think photographers will be drawn to this site, featuring ancient Easter Island-like statues in verdant and cool mountains. Thousands of years old, these statues are enigmatic and highly photogenic. Caño Cristales, the amazing river of many colors, isn't yet a UNESCO site, but should be.



ABOVE: Plitvice Lakes National Park, Croatia

4 Kizhi Pogost, Russian Federation

A main stop on the river cruise from St. Petersburg to Moscow, this island is the home of a number of stunning wooden Russian Orthodox churches and is one of Russia's best photography locales. It takes some time (the cruise was great), but it's well worth the trip to photograph these psychedelic-looking, wooden onion-studded marvels from the 18th century.

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5 Ait-Ben-Haddou, Morocco

I first became aware of this fabulous ancient desert city, the most amazing of its kind, from the movie, *Gladiator*. It actually has been used in practically every movie about the Middle East you've ever seen, going back to *Lawrence of Arabia*, and it's easy to get to. Tucked along the side of a Saharan mesa, I used all my planning skills to make sure I was there when there was a chance of clouds (September), when temperatures were moderate and the best views were lit by a 90º sun angle.

6 Plitvice Lakes National Park, Croatia

The lakes here are nice, but it's the blue-green waterfalls that people come to see and photograph. When I visited, I was struck by the helpfulness and welcoming quality of the park personnel to photographers. The rangers went out of their way to help me and gave great advice about where to go when. Visit this park in spring, when the waterfalls will be most vigorous and the lush greenery is coming alive. I've also seen published images of Plitvice in winter that looked magical.

Any photographer who surveys the UNESCO World Heritage Site list will discover intriguing names and places that translate into great photos. If it's on the list, it's something very special, and any photography trip will benefit by visiting at least some of these treasures of human and natural creation. OP



Tom Till *has been photographing landscape, nature and travel images for over 40 years. His latest book,* Photographing the World, *was recently published, and he continues an active shooting schedule in the field from his home in Moab, Utah. He's a frequent contributor to* OP. *Visit tomtillphotography.com.*

Tips For Photographing UNESCO World Heritage Sites

1. Prepare diligently before visiting a new location of any kind. A world-class photo of a world-class place requires homework. Look at images others have shot, study climate data to determine the best time of year to visit, and review Internet chatter and website info. The Photographer's Ephemeris (photo ephemeris.com) can help you with the very important sun position data at places you'll be working. My book, *Photographing the World*, is a great resource, covering 201 of the world's greatest landscape photography locations. Other guidebooks will help, too. In looking at my office library, I see several hundred such tomes, with Lonely Planet, DK and Fodor's represented the most.

2. Give World Heritage subjects enough time. At Iguazu Falls, I spent a week with only a three-kilometer trail to hike, and I got new and great image opportunities every day. On day three, I discovered the drop-dead gorgeous rainbow I had missed up to that point. At the world's most remarkable natural gestures, change comes on a moment-to-moment basis. Don't make the mistake of thinking you have it all in the bag—something new will always come. Mountain photography can take much longer than any other kind, so give it extra time. I don't know how many days I've waited for storms to clear off the peaks around the globe, but it seems like a lifetime.



Iguazu Falls, Iguazu Falls National Park, Brazil

3. Guides can be indispensable. At many places with good infrastructure, low crime and few language issues, I don't hire guides. I operate like I do at home, traveling independently on my own schedule and with my own agenda. I've been to Australia 14 times and have only hired guides twice, both times just for specific areas. Conversely, I'd never go to China or Brazil unguided. You can hire the guides yourself from travel companies, as I've done many times, with mostly excellent results. Sometimes I've had to be both good cop and bad cop, and remind my guide that I'm in charge, but usually, if you're assertive and single-minded, your guide will abide. Many companies advertise in this magazine, offering trips to UNESCO sites that would be difficult to manage on your own. I've been on a few of these and find that sometimes they have special privileges that I could never get myself. I also found that though I was part of a group, I had some freedom to approach subjects the way I wanted and branch out a little on my own. I've also found subjects on tours that I've returned to shoot later on my own under conditions of weather or lighting I thought was better. So, you might consider a tour as a scouting trip for certain UNESCO sites you want to photograph in more depth on your own.

4. Try to get something different. World Heritage locations have been photographed a lot, obviously—the Grand Canyon is one big example. The Japanese have done an awfully good job of shooting Mount Fuji, but I found a reflecting pond that I don't think anyone had ever used before. Located in the suburbs below the mountain and about a two-mile walk from my bed and breakfast, maybe it was just accidentally overlooked. I waited five days (becoming a convert to sake) for a foggy morning when the peak played hide-and-seek and the water was glassy. I also was there in the spring when snow on the mountain was at its maximum. The very grandeur of these places makes them hard to shoot sometimes when you think of all the photographers who have come before. Remember, though, that nature gives us all those lucky breaks if we put in the time, and that waiting for a photo op in one of the world's most beautiful places is hardly punishment.

5. Reconsider equipment strategies. After 35 years of 4x5 photography in over 100 countries, I've learned to be wary about approaching photography at World Heritage Sites. Rules about backpacks and tripods vary greatly in their existence and enforcement. Generally, you can expect human-created places to have more restrictive rules for photography than natural areas—but not always. Countries that are hard on photographers include Italy (I've been kicked out of Trevi Fountain four times), Greece, the United Kingdom, Mexico, Canada and many others. Asian countries seem the most lenient, with the exception of some places in Japan, and India, where about half the sites I visited banned tripods and half did not. The best solution I've found is the new Sony a7R II with its small size, high resolution and state-of-the-art, tripod-not-needed SteadyShot feature. No backpacks, no tripods, no big cameras—no problem.

6. Remember, the site is always more important than your photograph. We're all tempted to do whatever it takes to come home with the goods—a great image. After all, we've spent a great deal of time, money and energy on this pursuit, and we want to succeed. We all need to keep this simple mantra above in mind. As I saw on a web post today: "Don't even leave footprints."

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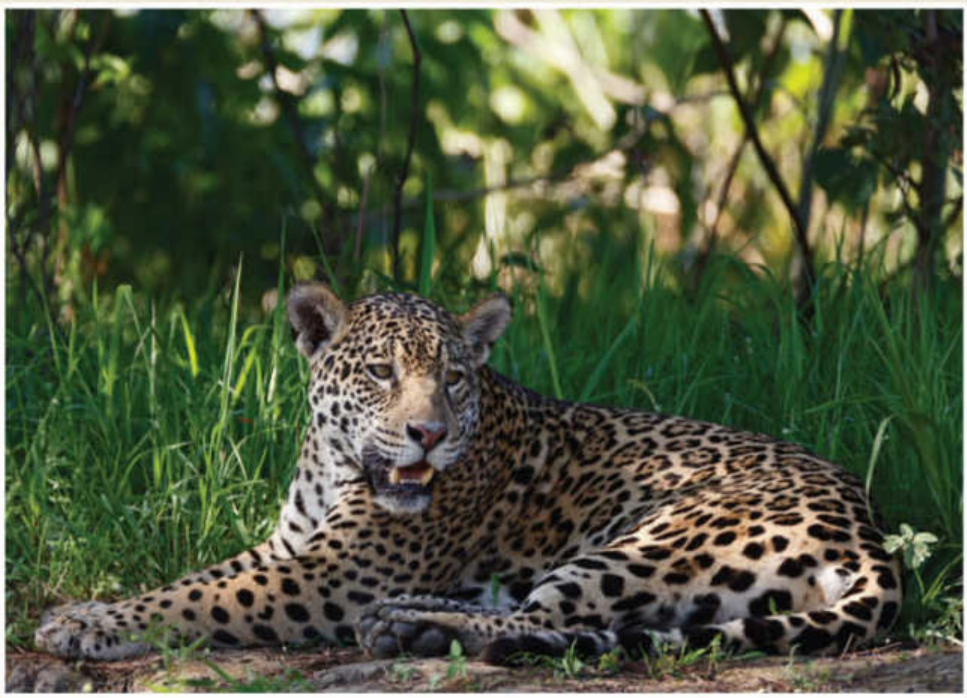
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Photograph Big Cats Of The Americas

| 2016 |

Big cats have an allure that few animals can match. Lions, tigers and leopards make popular subjects, but the big cats of the Americas haven't been as easily photographed—until now. Join Jeff Parker in April 2016 as he heads to Patagonia to photograph wild pumas (mountain lions, cougars). This incredible opportunity takes place on private ranches adjacent to Torres del Paine National Park, where dramatic peaks offer world-class photo ops. With pumas, guanacos, Andean condors, rheas and more, the photography on this nine-day all-inclusive tour (limited to six) is hard to beat. In August 2016, Jeff ventures into the Brazilian Pantanal to photograph jaguars. The Pantanal abounds with wildlife. In addition to the big cats, think capybara, caiman, three primate species, hyacinth macaws and Jabiru storks. This nine-day all-inclusive tour (limited to 10) includes five nights in a "Jaguar Suite" on a floating hotel in the heart of jaguar country. Such accommodations allow for first-light arrivals and later evening shoots. Join Parker for both photo tours and take $500 off the total.

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| February 18 and 21, 2016 |

Yosemite National Park is among the most beautiful landscapes in the country. But winter is a time for photographers. Scenic Light photography, conducted by professional Bob Evans, is conducting two separate three-day workshops. The opportunities for great image-making abound, and with a small class size of only 10 students, it gives Evans ample time for personal hands-on instruction. His many years of shooting in Yosemite give him the insight and experience to offer unlimited locations for the participants. Of the many dynamic sites around the valley is the Last Light on Horse Tail Falls, which is one of the highlights of this workshop. The workshop also focuses on the uses of light in the landscape, composition, filters and more. Scenic Light prides itself as a learning workshop and an opportunity to build your skills as a photographer. Thursday begins at 3 p.m. for an evening session. Friday, Saturday and Sunday begins early at sunrise to capture the alpenglow that Yosemite is known for. The second session starts again on Sunday afternoon at 3 p.m. and continues thru Wednesday at noon. A great value at only $450, plus group lodging available for $86 per night.

For more information, contact: Scenic Light, (916) 223-5211, info@sceniclight.com, www.sceniclight.com.

Creative Macro, Flower & Garden Photography Workshops

| 2016 |

Ignite your artistic passion in 2016! Join award-winning fine-art nature photographer Charles Needle for creative macro, flower and garden photography workshops that will challenge and inspire you to see in new ways and take your photography to the next level. Locations in 2016 include: Monet's Garden (Giverny, France) with private access, co-taught by *National Geographic* freelance photographer Dewitt Jones (*OP* columnist); The Butchart Gardens (Victoria, Canada); Keukenhof Gardens (Holland); The Atlanta Botanical Garden (Atlanta, Ga.); The Bloedel Reserve (Bainbridge Island, Wash.); the Portland Japanese Garden (Oregon) in the fall and many more. A passionate, enthusiastic workshop leader, Needle is known for teaching creative macro, impressionistic, multiple-exposure and artistic smartphone photography techniques. With more than 20 years of teaching experience, he specializes in small groups with lots of one-on-one, personalized instruction in the field and classroom. Workshops sell out quickly, so register soon.

For more information, contact: Charles Needle, (425) 968-2884, charles@charlesneedlephoto.com, www.charlesneedlephoto.com.

Russ Burden Nature Photo Tours

| 2016 |

Join *Outdoor Photographer* Tip Of The Week columnist, Russ Burden, on one of his nature photography tours to the Tanzanian Serengeti or an iconic destination in the U.S. He'll demo the techniques used to capture the photos he posts on the *OP* website. Burden's enthusiasm is contagious. Experience his unrelenting enthusiasm and desire to share his photographic knowledge and passion. He'll bring you to the best locations at the best times of the year and share the insight he has built up over his 30-plus years of teaching. Do you want a tour leader who's intimately familiar with every location and loves what he does? Do you want a tour leader whose return rate of past participants is off the charts? Then join Burden for an experience of a lifetime. He'll teach you how to read the light, create the optimum composition, improve your technical skills and motivate you to capture the ultimate image. Burden limits his domestic workshops to five participants so you'll always be given individual attention. For his safari to Tanzania, each of the six photographers will have his/her own row in the two tour vehicles. Burden's stock images are marketed through Getty Images.

For more information, contact: Russ Burden Nature Photography Tours, (720) 560-6123, rburden@ecentral.com, www.russburdenphotography.com.



Russ Burden

▸▸ For more workshop listings, go to **www.outdoorphotographer.com**

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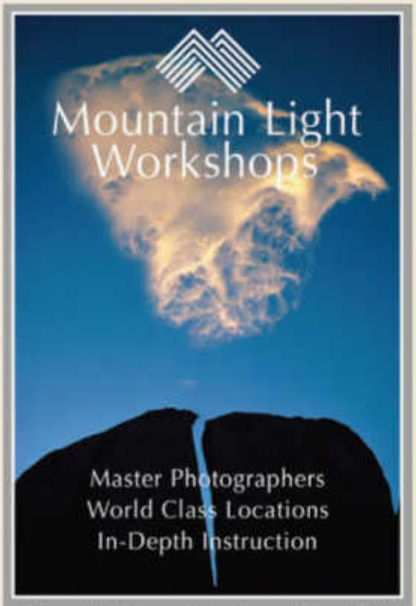
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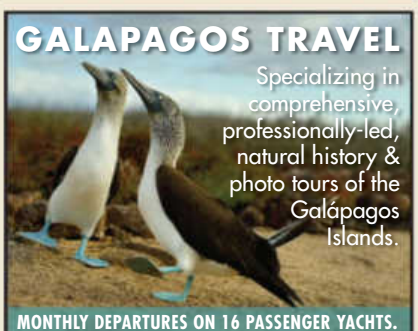


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(Cont'd from page 29)

pilot, a grizzled military veteran with lots of experience, moved fast, zoomed around the animals at close range and aggressively approached herds of elephants and giraffe. In every case, the animals ran in panic; I couldn't use a single photograph from the flight because they all documented inexcusable harassment of the subjects. The following year, our group worked with a younger female pilot. She was sensitive to the animals, her approaches were much less aggressive, and while the animals were certainly aware of the helicopter, they continued with their normal behavior and demonstrated no adverse responses. Technique matters, whether approaching animals by plane (or drone), on foot, by boat or in a snow machine. Being aggressive and pushing too close and too quickly will seldom yield desirable photographs and will often be detrimental to the subject.

Baiting

There has been a recent resurgence of the continuing discussion about baiting animals to entice them closer to the photographer or into a more favorable location for photography. One of the more serious early debates concerned polar bears near Churchill, Manitoba. At the beginning of winter, the hungry bears hang around Hudson Bay, waiting for the sea to freeze so they can reach their primary food source, the ringed and bearded seals that live out on the solid ice. Some 30 years ago, a few photographers were setting up camp with Tundra Buggies at a good distance from the primary bear-viewing area. When word got out that they were placing blocks of lard to bait the bears into photographic position, there was a huge protest from some conservationists. When I look back at it now, I don't think it was so terrible. The incidents were isolated; as soon as the ice was ready, the bears left for their preferred wild food sources and weren't being habituated to an unsustainable environment. The photographs attained by these photographers are now being used to call attention to the effects of climate change on the bears' environments. Would this work today with the great number of tourists that now come to this area? No.

But let's admit that baiting, by other names, is an essential strategy for both wildlife photography and sport hunting. A prime example is the planting of grain fields in or near wildlife refuges to augment or create habitats for migrating waterfowl that are accessible to hunters and photographers alike. On a smaller scale, I've been feeding small birds in my backyards in California, Colorado and now Oregon for many, many years. While some suggest that backyard bird feeding alters bird migration patterns, my observations don't support that theory; the birds come in for some free fast food, then move along on schedule. While they're in the neighborhood, I'm pleased to capture head-and-shoulder portraits of small birds from 3.2 feet away, using a blind and my new Canon EF 100-400mm Mark II zoom with a 1.4X tele-extender on a Canon EOS 7D Mark II. The angle of view is 896mm at 3.2 feet! Some types of baiting look more natural than bird feeders, but the effect is the same. We create desirable environments such as butterfly gardens and ponds to draw wildlife close to us so we can observe them, learn about them, photograph and remember them.

Understanding

While there always will be critics, we, as nature photographers, are part of the wilderness, and we have the potential to advance knowledge and understanding of our wild subjects and their environments. The best practices we can adopt as nature photographers are to pursue knowledge of our subjects before we photograph them, respect their environments, and do what we can to limit our impact as individuals and as a group. We believe that the nature photography community needs to engage more broadly in thoughtful discussions about human/wildlife interactions and, as individuals, we need to carefully consider the costs our passions may impose on others. Finally, we need to make discerning choices about the institutions, both public and private, that our photography dollars are supporting, and to be sure that their standards are consistent with ours. Don't be an unwitting accomplice to unwise breeding, the importation of wild animals from their natural environments, inhumane treatment or the canned hunt. **OP**

We were pleased to learn this magazine will introduce a new column that focuses on wildlife photography. "Wild by Nature," by our colleague Melissa Groo, will appear in the first issue of 2016. Congratulations to OP *and Melissa on this important new feature.*

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Get In The Action

The latest generation of point-of-view cameras offers enhanced still and video recording, plus improved durability

BY JULIA APARICIO

For outdoor sports and photo adventures on the trail or off, action cameras, or "point-of-view" cameras, let you capture high-resolution video and stills while you're fully immersed in the experience. Clip them to your chest, helmet, or the front of your bike or surfboard—the latest generation of action cameras is lighter and more durable than ever.



Garmin VIRB XE

The VIRB XE has an updated design from the previous VIRB, with a more rugged, compact exterior. This new model is waterproof down to 50 meters without a dive case, and also offers higher image quality than its predecessor, shooting high-definition, wide-angle footage in 1080 HD at 60 fps and 12-megapixel photos at up to 30 fps. With super-slow-mo, time-lapse, assorted zoom levels and image stabilization, the newest action camera from Garmin allows for a plethora of creative shooting options. The VIRB XE also offers a wider range of mounting choices for easier, on-the-go adventures.

Specifications

Angle Of View: 141.2°
Max Video Resolution: 1080 HD
Still Resolution: 12 MP, 7 MP
Still Burst Rate: Up to 30 fps
Time-Lapse: Custom up to 120-sec. intervals
Simultaneous Photo+Video: Yes
Integrated Display: Yes
Remote Control: Optional
Smartphone App: Yes
Built-In Audio: Yes
External Mic: Optional
GPS: Yes
WiFi: Yes
Storage: microSD
Dimensions: 3.0x1.6x1.4 inches
Weight: 5.35 ounces
List Price: $399
virb.garmin.com

Drift Stealth 2

The compact Drift Stealth 2 comes in at half the size of its forerunner, the Drift Ghost-S. The new, lightweight design is splash-proof, with a rotating lens that allows mounting of the pocket-sized action camera almost anywhere. Despite its smaller size, the Stealth 2 has an LCD screen and onboard controls that let you change modes and settings without having to connect to another device. The Stealth 2 does have connectivity options, however, with an optional remote control, as well as a smartphone app and built-in WiFi. The Stealth 2 shoots video at 1080 HD resolution, with a still burst rate of 3 fps, as well as time-lapse photos at intervals up to 60 seconds.

Specifications

Angle Of View: 135°
Max Video Resolution: 1080 HD
Still Resolution: 12 MP, 5 MP, 3 MP
Still Burst Rate: Up to 3 photos/second
Time-Lapse: 3 MP
Simultaneous Photo+Video: Yes
Integrated Display: Yes
Remote Control: Optional
Smartphone App: Yes
Built-In Audio: Yes
External Mic: No
GPS: No
WiFi: Yes
Storage: microSD
Dimensions: 3.15x1.65x1.06 inches
Weight: 3.41 ounces
List Price: $199
store.driftinnovation.com





GoPro HERO4 Session

The new HERO4 Session, coming in at 50% smaller and 40% lighter than their flagship model, the HERO4 Black, is GoPro's most water-friendly design yet—it doesn't require any additional housing for waterproofing. While the resolution isn't quite at the same level as the 4K HERO4 Black (the Session has a max video resolution of 1080 HD at 30/25 fps), the Session still carries many of the great qualities of that model, such as time-lapse and burst photo, which are both accessible through the free GoPro App for smart devices. The tiny Session is compatible with all GoPro mounts, allowing you to mount the camera to bikes, boards and helmets so you never miss the chance to capture your adventure.

Specifications

Angle Of View: 149.2º
Max Video Resolution: 1080 HD
Still Resolution: 8 MP
Still Burst Rate: 10 fps
Time-Lapse: Yes
Simultaneous Photo+Video: Yes
Integrated Display: No
Remote Control: Optional
Smartphone App: Yes
Built-In Audio: Mono
External Mic: No
GPS: No
WiFi: Yes
Storage: microSD
Dimensions: 1.5x1.5x1.43 (approx.)
Weight: 2.6 ounces
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gopro.com

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Contour ROAM3

Although Contour went on hiatus after releasing the ROAM2 and CONTOUR+2, they have returned with the waterproof, full HD ROAM3. Unlike the previous models, which were only able to go down to a depth of one meter without a housing, the ROAM3 is waterproof down to approximately 33 feet (10 meters). The ROAM3 also features a rotating lens with laser alignment above the lens to help set up your shot and keep video straight. The ROAM3 offers two options for mounting: Contour's sliding rail mounts or a tripod mount on the bottom. The design of this model is particularly useful for snowboarders and bikers, since the low-profile design of the ROAM3 fits closer when mounted to a helmet.

Specifications

Angle Of View: 170°
Max Video Resolution: 1080 HD
Still Resolution: 5 MP
Still Burst Rate: Up to 60 fps
Time-Lapse: Yes
Simultaneous Photo+Video: No
Integrated Display: No
Remote Control: No
Smartphone App: Yes
Built-In Audio: Yes
External Mic: Yes
GPS: No
WiFi: No
Storage: microSD/HC
Dimensions: 1.4x2.0x3.9 inches
Weight: 5.5 ounces
List Price: $199
contour.com

Sony FDR-X1000V

Like Sony's HDR-AS100V, the FDR-X1000V has a splash-resistant, shotgun-style body, along with a flattened base that allows the action camera to stand on its own. This new generation of Sony action cameras can record 4K video, with built-in image stabilization, exposure compensation and white balance control. The X1000V also features loop recording, which allows you to record video footage continuously at a resolution of 1080p, as well as 8-megapixel still images in bursts of 30 fps. Additional features include an optional wrist-mounted remote, a smartphone app, and built-in GPS and WiFi.

Specifications

Angle Of View: Up to 170°
Max Video Resolution: 1080 HD
Still Resolution: 8 MP
Still Burst Rate: 30 fps
Time-Lapse: Yes
Simultaneous Photo+Video: No
Integrated Display: Yes
Remote Control: Purchased separately
Smartphone App: Yes
Built-In Audio: Yes
External Mic: Optional
GPS: Yes
WiFi: Yes
Storage: microSD/HC/XC
Dimensions: 1.0x2.0x3.5 inches
Weight: 3.14 ounces (without battery)
List Price: $499
store.sony.com





Ricoh WG-M1

The rugged Ricoh WG-M1 is intended to withstand the elements. Its compact design is dustproof, waterproof to depths of 32 feet, shockproof at drops of up to 6.5 feet and cold-resistant at temperatures down to 14°F. The WG-M1 can capture still images at up to 14-megapixel resolution at a burst rate of up to 10 fps, plus full HD 1080p video at 30 fps. The camera also offers a choice of four angles of view: Wide (160° in photo, 137° in video), Medium, Narrow and Underwater. The WG-M1 includes time-lapse recording, a motion-detection feature that automatically starts recording when it detects movement, and Face Detection autofocus to help keep the people in your pictures and videos clear and correctly exposed.

Specifications

Angle Of View: Up to 160°
Max Video Resolution: 1080 HD
Still Resolution: 14 MP
Still Burst Rate: 10 fps
Time-Lapse: Yes
Simultaneous Photo+Video: No
Integrated Display: 1.5 inches
Remote Control: Via app
Smartphone App: Yes
Built-In Audio: Stereo
External Mic: No
GPS: No
WiFi: Yes
Storage: microSD
Dimensions: 3.5x2.6x1.7 inches
Weight: 6.7 ounces
List Price: $299
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Xpandable Series — Long Lens Bags

NEW

This is one smart bag. Whether you're in the field or a safari vehicle it's perfect when you want to be ready to take the shot at a moment's notice. The Xpandable bag can be ingeniously folded to three different sizes – or folded flat!

- Removable lid with pocket zips on easily & securely at all three positions
- Male and female ends on removable shoulder strap allow for strap to be used to secure bag
- Removable reinforced insert panels allow you to configure the weight and support
- Expandable exterior mesh pocket
- Removable harness (sold separately)
- Multiple connection points to secure the bag
- Built to last with heavy-duty water-resistant Codura and lightweight, water-resistant nylon lining
- Soft sided construction allow the bag to be folded nearly flat
- M.O.L.L.E webbing system to easily add pouches & accessories
- Available in Black, Digital Camo, Forest Green Camo, or Realtree Max4
- Made in the USA



Shown with optional harness



Folded Flat



3Xpandable Internal dimensions 8" x 8" x 19.75" or 23.5" or 27.75"
Accommodates camera body with lenses such as Canon 200-400mm, 300mm f/2.8, 400mm DO, 500mm, Nikon 200-400mm, 300 f/2.8, 500mm, Sigma 500mm, 300-800mm, Sony 500mm

4Xpandable Internal dimensions 9" x 9" x 21.5" or 24.5"or 28.75"
Accommodates camera body and lens such as Canon & Nikon 400mm f/2.8, 500mm, 600mm, 800mm

LegCoat Wraps (set of 3)

- Wrap around the upper leg of your tripod
- Tightly grips to your tripod so they will not slide



Memory Wallets

- Lightweight waterproof
- Easy clip on tether
- 7 different colors/patterns
- 6 designs: CF6/10, SD9/15, Combo 43/66



RainCoat 2

NEW

Pro

The LensCoat® RainCoat 2 has all same great features as the original RainCoat but adds an additional integrated pocket with foldaway arm sleeve on the left side.

Pro 30.5" 11.6oz
(hood extension for 600mm & 800mm 8" 2.4oz)
Standard 20.5" 9.4oz





Other Innovations from LensCoat®

• Gimbal Pouch • CB Gimbal Pouch • Manfrotto 393 Gimbal Pouch
• RRS PG Pouch • BeamerKeeper • FilterPouch 2 • FilterPouch 8
• TravelCoat • LensPouches • FlashKeeper • iPad Sleeve • LegCoat Wraps

LensCoat.com

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SP35mm & SP45mm





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FUJIFILM

X-SERIES
DIGITAL CAMERAS



Photo © 2015 Jonathan Irish | FUJIFILM X-T1 Camera and XF50-140mm F2.8 R LM OIS WR Lens, at 1/1600sec at F8, ISO 400.

Inspiring places can fuel a **Passion...**



"As a professional outdoor, adventure, and travel photographer who finds myself in faraway locations and challenging environments, the right balance between weight and image quality is essential. Aside from the X-Series' compact size, what stands out is its striking image quality. The X-T1's weatherproofing comes in handy when I'm trekking through rain or snow, and lightning fast autofocus allows me to capture fast action scenarios. With Fujifilm, it was love at first click."
- Jonathan Irish



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